THE DIAMOND MATCH CO.
EAST WILMINGTON. CALIF.

January 3, 17.

Cap't. W. C. Crandall
Scripp's Biological Institute,
La Jolla, Calif.

Dear Sir:

Since August 19, 16, we have cut approximately 12,000 tons of wet kelp. Please excuse delay in sending this report in.

Yours very truly

CAP.M

for Crandall

UNIVERSITY OF CALIFORNIA
OFFICE OF THE PRESIDENT

Berkeley, January 3, 1917.

My dear Dr. Ritter:

Would you kindly reply to the attached letter from Mr. Hurst? I have written to Mr. Hurst saying that in the absence of the President, I was taking the liberty of referring the matter to you for consideration.

Very sincerely yours,

Newton B. Drury.
Secretary to the President.

Dr. William E. Ritter, Director,
Scripps Institution for Biological Research,
La Jolla, California.

1125 Central Building,
Los Angeles, California.
December 29, 1916.

Mr. Benj. Ide Wheeler, President,
University of California,
Berkley, California.

My dear Mr. Wheeler:-

I am interested in the manufacture of Potash, Iodine, and Dyes from Kelp.

I thoroughly believe that God's plan of enabling man to control the waters as well as the earth is to pick up in the fronds of the Kelp, Potash and other useful chemicals that have once been taken from the ground in the form of food and used by man and beast, that man may gather it, return it to the soil, grow more food, consume it and then continue indefinitely this rotation of the chemicals necessary to grow grains, fruits and vegetables.

I have made a careful study of Kelp beds for several years past and am fully convinced that in no way would the spawning, or the growth, or the supply of fish be injured by the cutting of Kelp with a sharp sickle about 18" under the water, especially under the Ordinance recently enacted by the County of Santa Barbara, which provides that the Kelp shall be cut in strips not more than 200' wide and another strip 200' wide left and thus continue with alternate strips,- and that the first strip of 200' left shall not be cut until the two strips of 200' in width on each side of it have grown to full size.

The newspapers have recently been teeming with ar-

ticles from people pretending to know something about the Kelp industry, claiming (1) that the cutting of Kelp will forever destroy it and (2) that the mere cutting, even if it grows back - as we know it will in from 90 to 100 days,- would prevent the spawning of fish in the Kelp beds.

Will you kindly write me what you know on this subject, particularly as touching the habits of fish in or about Kelp beds and what the effect, if any, would be on fish growth and supply in the cutting and harvesting of Kelp, in the manner above described.

A very early reply would be appreciated for the reason that a considerable amount of money is being withheld from this industry through the fear that the Government may find upon thorough investigation that the Kelp industry would destroy the fish off the Coast of California, and would cause the enactment of laws to prevent the harvesting of Kelp.

Very sincerely yours,

W. R. Hearst

ISH.F

REC'D
JAN 2 19[illegible]
PRESIDENT'S
OFFICE

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

FWB
CES
attitude toward Investigation
INVESTIGATION OF FERTILIZER RESOURCES.

Kelp Supply

January five,
1917.

Capt. W. C. Crandall,
Scripps Marine Biological Laboratory,
La Jolla, California.

Dear Crandall:

Your appreciated communications of the 18th and 23rd ultimo respectively, are before me for attention.

We attach no little importance to the action of the gentlemen interested at their recent meeting in San Diego to consider legislation for the control of the kelp industry; not that we feel that the success of the proposed Government plant will depend on the action of the gentlemen engaged in the kelp industry or on the Fish and Game Commission, but on account of the principle involved. As you know, the only consideration that the Department desired from the proposed bill was represented by the clause stricken out at the San Diego meeting. This recognition was accorded the Department in my presence unanimously and seemingly enthusiastically. In my absence they repudiated their agreement. It does not add to the enthusiasm with which I enter upon the proposed experiments that the people for whose benefit the experiments are designed should at the first opportunity take action derogatory to the interests of those experiments. I was given the opportunity to attend the meeting referred to and to call the meeting for a date convenient for me. On account of my hurry to return East and my feeling that I could not wait until the time when

Mr. Westerfeld could be present, I took the position that it was more important that Mr. Westerfeld than that I be present, and accordingly suggested that the meeting be held to suit Mr. Westerfeld's convenience. It did not occur to me that anything derogatory to our interests could possibly transpire, and that if any such proposal should come up, our interests would be looked after. I do not understand the narrow point of view of the kelp industry as evidenced at this meeting. The money appropriated by Congress which we propose to expend at Summerland is nothing more or less than a subsidy for the kelp industry. In their action at San Diego the industry proposed to divert a portion of this subsidy to some other purpose than that for which it was appropriated. In this they are working against their own interests, as it is evident the more money we spend for taxation the less we will have available for experimentation. Furthermore, they attach a great deal of importance, seemingly, to the quantity of kelp that we propose to cut, namely, two hundred tons per day. I have not heard any protests being made over the quantities of kelp to be cut by new companies going into the kelp game or those at present in the kelp industry who propose to enlarge their plants. Why the Government's plant should be picked out as the only one to be attacked when it is the only one that has the interests of the industry at all at heart is more than I can see. It is a type of collaboration that I do not exactly enjoy and for that reason have called upon the men personally to make known to me their attitude towards our work.

Mr. Westerfield could be present, I took the position that it was more important that Mr. Westerfield then that I be present, and accordingly suggested that the meeting be held to suit Mr. Westerfield's convenience. It did not occur to me that anything derogatory to our interests could possibly transpire, and that if any such proposal should come up, our interests would be looked after. I do not understand the narrow point of view of the kelp industry as evidenced at this meeting. The money appropriated by Congress which we propose to expend at Summerland is nothing more or less than a subsidy for the kelp industry. In their action at San Diego the industry proposed to divert a portion of this subsidy to some other purpose than that for which it was appropriated. In this they are working against their own interests, as it is evident the more money we spend for taxation the less we will have available for experimentation. Furthermore, they attach a great deal of importance, seemingly, to the quantity of kelp that we propose to cut, namely, two hundred tons per day. I have not heard any protests being made over the quantities of kelp to be cut by new companies going into the kelp game or those at present in the kelp industry who propose to enlarge their plants. Why the Government's plant should be picked out as the only one to be attacked when it is the only one that has the interests of the industry at all at heart is more than I can see. It is a type of collaboration that I do not exactly enjoy and for that reason have called upon the men personally to make known to me their attitude towards our work.

I realize, and have realized for some time, that I have not kept you fully informed of the progress of our plans. They have been developing so rapidly and in consequence I have been so busy that I have not had time to write you fully with regard thereto. I regret this for more reasons than one and trust that you do not feel that you have not had consideration. As you know, we propose to erect the plant at Summerland. We have gone to Summerland at the expense of our personal convenience so that we could harvest kelp without competing with the other operators. The operating conditions at Summerland will be a good deal more difficult than at the other locations considered, but there is abundant kelp for our use without interfering with the established companies. This fact seems to have been lost sight of by the gentlemen who have registered their objections to our taking two hundred tons per day. We are now ordering the apparatus necessary and propose to erect the plant with all dispatch possible. We propose to operate an experimental plant on a commercial scale, so that the data secured will be applicable to a commercial scale. As you know, we have already done elaborate experimentation on a laboratory scale, and working from these data we have at times gone astray. It is not necessary, therefore, to look upon the proposed plant as a commercial plant, especially so since the proceeds from the products sold will not be available for the use of the plant but will revert to the United States Treasury.

Mr. Markell of the Hercules Powder Company is still insistent that his position with regard to the supply of kelp is correct. We

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Mr. Merkell of the Hercules Powder Company is still insistent that his position with regard to the supply of kelp is correct. We

have shown you a former letter from him on that subject. Assuming the correctness of his estimates, it may be said that he is logically correct in his position that it is a waste of public funds to develop methods of extracting potash from kelp when the quantity of kelp available is so small. We are not, however, willing to accept his estimates and I do not feel that his recommendations are at all to the point.

I am bending every effort now to finishing up the various things that have to be done here so that I can get to the Coast at the earliest possible moment. At such a time I hope I shall see you.

With kind personal regards,

Yours very sincerely,

J. W. TURRENTINE

Scientist.

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With kind personal regards,

Yours very sincerely,

J. W. TURRENTINE

Botanist.

(COPY)

January 6, 1917.

Mr. N.B. Scofield,
Fish and Game Commission,
New Call Building,
San Francisco, Cal.

My dear Mr. Scofield:-

I am very glad indeed to have your good letter of the 30th ultimo relative to the collaboration between The Fish and Game Commission and the Department of Agriculture in the work proposed on the extraction of potash from kelp. I have had the feeling all along that the situation which has been discussed between us had its origin in a misunderstanding. I could not see how otherwise, opposition could have developed in any quarter when it is the purpose of all of us to work exclusively for the public good. I am sorry that the people at San Diego in discussing our plans -- with which they evidently are not very conversant -- did not take into consideration the fact that we had gone to Summerland for the erection of our plant in order to avoid the question of competing with them in procuring the necessary kelp. In going to Summerland we shall encounter difficulties of operation which would not exist at either San Diego or Long Beach. We have made operating conditions much more difficult for us solely that we may avoid interfering with the operations of the other companies in the matter of securing kelp. So long as we obtain kelp from an area where the other operatorz are not harvesting, I cannot see how it can matter to them what quantity we take.

The question whether the Departmental plant is to operate for profit or not seems to give the operators further concern. If in the course of our operations, potash is produced -- as it undoubtedly will be, I trust -- some disposition will have to be made thereof. Obviously either it must be stored indefinitely, given away or sold. As far as the plant itself is concerned it will not matter which is done, since any proceeds from the sale of the products will revert to the United States Treasury and will not be available for the use of the plant. If sold it will be sold at market price and to the highest bidder. The quantity thus put on the market would certainly be too small to influence the price. Therefore I cannot see that it is any concern of the present operators to what purpose the products of the plant are put. If the Department is spending more money on the potash it produces than it recovers from its sale, as doubteless will be the case; it cannot be said that the potash is being sold at a profit, but whether it is or not, I cannot see what bearing that has on the subject or why it should influence the attitude of the kelp interests towards the proposed plant.

As a result of my investigations of the kelp industry, it is my conviction that the harvesting and drying of kelp is perhaps the most important item to be investigated. Obviously it is out of the

question to hope to throw any light on either one of these subjects unless the apparatus used in the investigation handles commercial quantities of kelp. This must be obvious to the operators. Therefore we propose to construct a plant with a daily capacity of two hundred tons. This capacity may be realized and yet it may not. In addition to these problems, we have numerous ones also very important relating to the recovery of byproducts, none of which is now being produced. I think it is evident to you from your own observations that if these points are not cleared up, upon the restoration of competition with Germany the potash industry as now organized will go out of existence. To my certain knowledge one of the big companies at San Diego already has entered into negotiations with certain parties with the idea in view of their closing down their plant at once. These operators seem to fear some mysterious and under-handed plans on the part of the Department, refusing to believe that we have told them all we have in our minds on the subject, and that the cards are all on the table. I see no reason why an organization such as our own should adopt any other method.

I have thus gone into details with you in order that you may have from me direct a full statement concerning those features of our plans which seem to be of concern to certain of the kelp operators. I have taken the matter up also directly with Mr. Markell of the Hercules Powder Company, and he has assured me that he will interest his Mr. Tally at San Diego to withdraw any opposition to our plans. I believe the operators at Long Beach are still ready to cooperate to their utmost with us in our work. As I understand it, they took no positive action at your San Diego meeting.

I am now beinding every effort to finishing the things that must be done before I can go to the Coast. I hope that I can get out in time for your next meeting. If I cannot, I feel sure that the present matter can be left entirely in your hands.

Thanking you again for your kind assurances of good will and cooperation, and with regards to your associates on the Commission,

Yours very sincerely,

(Signed) J. W. TURRENTINE,

Scientist.

United State Dept. of Agriculture,
Bureau of Soils,
Washington, D. C.

UNIVERSITY OF CALIFORNIA
DEPARTMENT OF BOTANY
BERKELEY

Jan 8. 1917.

Capt. W. C. Crandall
La Jolla. Calif.

Dear Capt. Crandall.

I was recently employed by the U. S. Bureau of Fisheries, as Temporary Assistant working during my spare time locally, and during holiday periods between Semesters, extending the field of investigation along the Pacific Coast.

Among other matters concerning the study of algae from various standpoints I suggested the investigation of the relation between the kelp industry recently established along the southern coast of Calif. and the fish industry. I have been informed that already you and others have this problem under consideration, and I have been requested to communicate with you in regard to the extent and nature of your investigations and if possible cooperate with you and not duplicate the work.

UNIVERSITY OF CALIFORNIA
DEPARTMENT OF BOTANY
BERKELEY

among the subjects I should think that would be worth considering are, the length of time required for the new growth of Macrocystis to become available for harvesting, that is how often it may be harvested profitably, the seasons of most rapid growth, the effect of cutting upon new growth, the relative value of young and old or mature fronds, the "fruiting" season; and then of course the direct effect of cutting upon the movements of fishes, etc.

I visited La Jolla during the Christmas holidays hoping to meet you and talk these matters over, but was informed that you were away. Was sorry to miss you.

Will you kindly let me hear from you regarding the present status of the work along the lines suggested above, and any others you may have in mind, so that possibly I may cooperate in some way with you.

I expect to go north to Washington and British Columbia during the Summer vacation

Respectfully yours

W. L. Gardner

UNIVERSITY OF CALIFORNIA
HERBARIUM
BERKELEY

UNIVERSITY OF CALIFORNIA
DEPARTMENT OF BOTANY
BERKELEY

January 11th, 1917.

Dr. J. W. Turrentine,
Bureau of Soils,
Washington, D. C.

Dear Sir:

I have been informed by Dr. Hugh M. Smith of the Bureau of Fisheries that you are in charge of the United States Government kelp investigation on the coast of California. I was recently appointed Temporary Assistant in the Bureau of Fisheries to conduct, among other subjects, some investigation regarding the relation of marine algae to various species of fish. I am requested to communicate with you to ascertain if there is any phase of the general problem of the utilization of marine algae relating to fisheries that you may have in mind in which I might co-operate in its solution.

I am at present engaged in my spare time with Professor W. A. Setchell in writing a Flora of the Marine Algae of the Pacific Coast of North America. If any botanical problems arise in connection with your work on which you may need help, I shall be very glad to render whatever assistance I may be able to in its solution. Hoping to hear from you at your convenience

I am

Very respecfully yours,

N. L. Gardner

(COPY)

Santa Barbara - Ordinance Regarding Kelp

Long Beach, Calif.,
January 13, 1917.

Mr. Carl Westerfeld,
Executive Officer,
State Fish and Game Commission,
San Francisco, California.

Dear Sir:

I have just heard that there exists an impression that this Company is seeking some kind of unfair advantage over other kelp manufacturers through the United States Government. I would pay no attention to such rot if this information did not come in a way that seems to justify a statement from me.

When Mr. George Simmons was out here last July, we decided to build a Lorned Manufacturing Company branch plant at Summerland. Then later we found that there existed an ordinance in Santa Barbara County prohibiting the cutting of kelp, and as a matter of policy we deferred any action towards building this plant until such time as the people of Santa Barbara County and particularly the Supervisors could be shown that such an ordinance was a shortsighted policy, and until they could repeal it and substitute in its stead a regulatory ordinance for the cutting of kelp. Your office has a copy of that ordinance. Under that ordinance we have received a license for certain kelp beds, under which license we are to pay the County of Santa Barbara a royalty of 2½¢ per wet ton; the Government has been assigned certain other kelp beds, for which they are to pay the County no royalty; and there are two other companies, the California Chemical Company, which is also building at Summerland, and the United States Potash and Fertilizer Company, which has received a licenec from the County for the kelp beds off Gaviota, both of these permits being the same as ours and calling for a royalty to the County of 2½¢ per wet ton.

As I understand it, the Government applied to the Supervisors of Santa Barbara County for a permit in the regular way prescribed by the County ordinance as a matter of courtesy, after they had decided that the great abundance of kelp in that locality made that a better location for them than either Long Beach or San Diego, in spite of the fact that both of the latter places were more convenient points at which to operate for almost every other reason.

When we first determined upon Summerland as a location for a branch plant, we secured from the Kern Trading & Oil Company a lease on their long wharf and seven lots at Summerland. The water is shallow at Summerland and it would be very expensive to build a new wharf. Inasmuch as this wharf is twenty-four feet wide, there is ample room for two plants to use it, and so we consented to have the Government use one side of it, for which they will pay half the cost of the rental agreed upon with the Kern Trading & Oil Company.

In every respect, except this use of the same wharf, the Government plant will be as distinct and separate from our Summerland plant as from any plant located at Long Beach or at San Diego. The Government kelp field is entirely distinct from ours and from the other Santa Barbara County manufacturers. The operation of the Government plant in every particular will be entirely separate from ours and ours from theirs. We have received no benefit whatever from the Government work so far, and we expect to receive none except as the Government may develop new methods and processes for the recovery of by-products; and such benefits will be open to all the other manufacturers exactly the same as it will to us. We have tried to be of assistance to the Government in the preliminary work, and we have shown them all of our processes and methods and system of handling the work and the records of it simply to enable them to take up the work at the stage where we now are, instead of having to go over the same ground again--and it is my understanding that most of the other manufacturers in the business showed Dr. Turrentine the same courtesy in the same spirit.

The only excuse I can think of for the existence of a suspicion that our Company is enjoying any privilege that any other company is denied is the fact that in the Government's desire to harmonize its application with the provisions of the Santa Barbara ordinance, which provides for filing application twelve days before said application is formally heard by the Supervisors in session, the Department of Agriculture wired me requesting that I make the application for the Government at the same time I made application for the Lorned Manufacturing Company, and that Dr. Turrentine would be out to attend the hearing in person; and I was authorized to make this application for the Government and appointed as their temporary agent. As far as I know the Government appointed me their agent to do this instead of employing some attorney or some other agent simply because I was familiar with the conditions and the object of the Government work, and because Dr. Turrentine and the representative of the California Chemical Company and ourselves have tentatively agreed to a division of the beds nearest to Summerland into three approximately equal parts. At the Supervisors meeting, when these applications were heard, some of the citizens, who heard that we were going "to cut the kelp and ruin the Santa Barbara Coast and allow the wharves to be washed away," etc., and who appeared, therefore, to object to the granting of these applications, raised the question

as to what connection, if any, I had with the Government or what connection there would be between the Government plant and ours. Dr. Turrentine and I explained fully that there was no connection between the Government plant and ours, and that there was no connection between any Government employee and our plant, nor between any representative or employee of the Lorned Manufacturing Company and the Government plant--and that the reason I made application for the Government was simply as an accomodation to them because Dr. Turrentine was in Washington and couldn't be here the necessary twelve days that had to elapse between the filing and the hearing of the application.

I helped to organize the Pacific Kelp Manufacturers Association here at Long Beach, and have taken considerable interest in it. All of the manufacturers here have cooperated with each other to the very decided advantage of all concerned. There has been a particular field for this in the absence of proper legal regulation, and we are now, by common consent, protecting the Point Firmin beds here from cutting by anybody to enable them to grow up, and we are subsisting with considerable inconvenience on less convenient beds until the Point Firmin bed does come back to its full growth again. From then on we believe that by proper cooperation in harvesting and by alternating between the Point Firmin and the Redondo beds (cutting on the one while allowing the other to grow) the manufacturers in this field will have enough kelp at all times.

I have taken considerable interest in the general meetings on the subject of the State legislation in the interest of proper kelp regulation to the benefit of all of the manufacturers and have had no idea of any special advantage to this Company over any other Company in the business. I am writing this letter in case you may have heard that there is this absurd and unworthy suspicion of "something sinister" between us and the Government and because I desire to do what I can towards cooperation, as far as possible, between the various manufacturers and the representatives of the State and of the Federal Government in this game--and the spirit of such cooperation would be seriously impaired if some of the manufacturers believed that any of the others had, or were trying to get, any unfair advantage. For the same reason I am sending a copy of this letter to each of the manufacturers, to Dr. Crandall of the Scripps Institute, and to Dr. Turrentine of the Department of Agriculture at Washington.

Very truly yours,

(Signed) L. H. Thompson,

Vice-President.

LHT*ELB

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

Investigation

INVESTIGATION OF FERTILIZER RESOURCES.

Supply

San Diego, Cal. Jan. 15th 1917.

Dr. J. W Turrentine,

Washington, D.C.

My dear Dr. Turrentine:

Your letter of the 5th inst is at hand. It was the first real firstclass information that I have had to work on and as a result I suspect that you will find things cleared away in good shape when you return i .e. within reason at least. Yesterday I went to Long-Beach and saw Thompson so as to have his side of the situation as it has developed at this end and now I am in a position to really talk to the men here in San Diego. However I have already had a good talk with Watson of Swift and he has seen Tally and whatever misunderstanding may have arisen, I think is on the way to clearing up.

The main question with you is the matter of the license and privilege tax. The tax is an unimportant one from the State standpoint. That part will be adjusted, I feel sure as I shall take the matter up with Westerfelt and Scofield when I go North the later part of this week. That matter would amount to not over $600 per year if the Federal Plant were to run 300 days a year at 200 tons per day. The other point is regarding the jurisdiction of the beds. As it has been decided that the State Fish ad Game Commission is to be responsible for the rules and regulations , it is only logical to assume that they must have the regulatory power vested in themselves alone or else conflicting circumstances will arise that will make their place untenable possibly. Therefore I am certain that looking at the matter from this standpoint and acknowledging that the law states

that the State shall control the beds and th at thisState has placed its regulation under the Fish and Game Commission, that the proposed amendment as proposed to the Act to be summitted is a fair and just one. Either there mu t be some central head ors all the work that has been done must go for nothing.

For argument, suppose the Fish and Game Commission is aware of a local condition that seems to reuire the definite closing of a bed, possibly a condition of the bed or possibly a matter of policy, then if they give you power to act without some kind of authorization or regulation, you go in on this bed and cut it. The result is that they fail to keep a pledge unwittingly and you and they then get at loggerheads about a matter that probably would not have occured except for a losse understanding. As a matter pf policy and safty for yo ur own work, I should anticipate that the more definite arrangement you and the Fish and Game Commission can arrive at the more cordial will be the relations. This does not mean that you will be hampered in nay way but will mean that they will know what you wnat to do with the beds and that they can work in accord with you. Without hesitatinn, I feel that youwould do yourself an injustice to assume the work under any other understanding and that this sort of an active understanding will be to your advantage. Now this sort of an agreement I will have underway this week or the first part of next unless I hear by telegram to the contrayy.

1. Do away with all entinn of any privelege or license tax.

2. To make the Fish and Game Commission the regulating body whose authorization must be obtained in order to have a central

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

clearing house.

I ppobably shall leave Thursday f r the North and be there for a week or so.

So far as the supply of kelp is c ncerned, I am sure that Mr. Markel is not right but I am also sure that my first estimate is too high and that we must make a point intermediate as the right one. I Have a method now worked out that is bound to give me the correct data in this regard. Then we will have to take up the matter of the destroying of the beds without the getting of the entire cut as one of the hard points to work out. At present I am trying to get the State Legislature ton et me have a couple of men here to study the life history of the kelp for two years. I have not the time for the constant attention that is necessayy but I have the facilities to do the work with except the men.

This afternoon I am to see Tally and Watson and then I think th t I can go North with a clean bill of health to tackle the F & G Com. There is still sixty days left to get the things done right in. With best regards and truxting that this may relieve the mental strain regarding the local situation, I am

Sincerely yours

STATE OF CALIFORNIA
FISH AND GAME COMMISSION

F. M. NEWBERT PRESIDENT SACRAMENTO
M. J. CONNELL COMMISSIONER LOS ANGELES CARL WESTERFELD COMMISSIONER SAN FRANCISCO
ERNEST SCHAEFFLE SECRETARY SAN FRANCISCO

San Francisco,
Jan. 16, 1917.

MR. W. C. CRANDALL,
La Jolla, Cal.

Dear Mr. Crandall:-

We have just received a letter from Mr. L. H. Thompson in which he sets forth rather fully his company's relations with the Government Kelp Plant and Santa Barbara County. A copy of this letter, he says, has been sent to you and to each of the kelp manufacturers. We are sending enclosed a copy of a letter on the same subject from Dr. Turrentine, in which you will note he has talked with and satisfied Mr. Markell and that Mr. Markell has asked Mr. Talley to withdraw any opposition of their company.

We trust that any fears the manufacturers may have had in regard to the operations of the Government Plant will be allayed by the explanations in the two letters. We are, therefore, submitting to you a re-draft of the clause under which permits may be given to the Government or to scientific or educational institutions to cut kelp. You will see that we have stricken out the part which provides that they shall not operate for profit and have made more definite that part which places them under the regulations of the Fish and Game Commission. We think Dr. Turrentine's statement of what disposition is to be made of the product produced should satisfy the manufacturers. With the Fish and Game Commission having the power to withdraw their permit and also having the power to regulate their operations, there should be no fear that their privileges will be abused.

We would like to have your comments on the matter and would also like to know if it will be possible for you to get the opinion of the manufacturers on this change. If they are in favor of this re-draft of the permit clause, it may not be necessary to have another meeting, at least for a while.

Will you have any one to introduce the kelp bill? The bill should probably be introduced this week

STATE OF CALIFORNIA
FISH AND GAME COMMISSION

W.H.Crandall #2

and if any further changes in it are necessary, that can be done by amending.

Very truly yours,
FISH AND GAME COMMISSION,
N. B. Scofield
Commercial Fisheries Department.

NBS/H

HER. 355

ALL QUOTATIONS SUBJECT TO CHANGE WITHOUT NOTICE

CABLE ADDRESS "HERPOCO"

HERCULES POWDER CO.

CHICAGO, ILL.
DENVER, COL.
HAZLETON, PA.
PITTSBURG, KAN.
JOPLIN, MO.
NEW YORK, N.Y.
PITTSBURGH, PA.
SALT LAKE CITY, UTAH
SAN FRANCISCO, CAL.
ST. LOUIS, MO.
WILMINGTON, DEL.
MEMPHIS, TENN.

MANUFACTURERS OF EXPLOSIVES

DYNAMITE
GELATIN DYNAMITE
BLASTING GELATIN
PERMISSIBLE POWDERS
BLASTING SUPPLIES
BLASTING POWDER
BLACK SPORTING POWDERS
SMOKELESS SHOTGUN POWDERS
SMOKELESS RIFLE POWDERS

San Diego, California,
January 17, 1917.

Dr. W. C. Crandall,
Biological Station,
La Jolla, California.

Dear Sir:

I beg to enclose, herein, copy of letter sent to Mr. N. B. Scofield , Fish & Game Commission, San Francisco, concerning our desires regarding insertion of a paragraph relieving the U. S. Department of Agriculture from all taxation.

We hope that you and Mr. Scofield will draft a paragraph which will cover the situation, and that you will be successful in having the entire bill passed by the legislature without improper amendments.

Yours truly,

Herbert Vaccy.

HT:D:A

SAFETY FIRST—USE PERMISSIBLE EXPLOSIVES THAT DO NOT REQUIRE THAWING
AWARDED THE GRAND PRIZE FOR SMOKELESS SHOTGUN POWDERS AND THE MEDAL OF HONOR FOR HIGH EXPLOSIVES PANAMA-PACIFIC EXPOSITION.

HER. 374

HERCULES POWDER

Copy for Dr. Crandall.

San Diego, California,
January 17, 1917.

Mr. M. B. Scofield,
Fish & Game Commission,
New Call Building,
San Francisco, California.

Dear Sir:

At the recent meeting of the Fish & Game Commission and the companies interested in the kelp industry, held in San Diego, the last paragraph of section nine was eliminated.

We believe that a paragraph, more definitely worded, should be inserted in the bill. We feel that the U. S. Department of Agriculture should be relieved from all taxation, and that concerning all other features of the law, they should be subjected to the discretion of the Fish & Game Commission, the same as the commercial harvesters of kelp. We feel that the ma king of regulations and the enforcement of such regulations should be left entirely in the power of the Fish & Game Commission, under the proposed law.

We have had our general counsel, G. G. Rheuby, examine the proposed law and he has suggested a few minor changes, which are indicated on the copy contained herewith.

We wish to state that we are ready to assist the Fish & Game Commission and the U. S. Bureau of Soils in every respect, and to lean upon them for assistance, and for a just preservation of our rights, and those of others.

Yours very truly,

Herbert Talbey

HT:A

Section 2. The Board of Fish and Game Commission of the State of California are hereby empowered to carry out the provisions of this act and to make and enforce all proper rules and regulations for the taking and harvesting of kelp etc.

Eliminate-"and to see that the laws ---------- ---- -- are strictly enforced".

Section 5. Every person, firm or corporation engaged in taking or harvesting kelp for profit in the waters of this state shall cause all wet kelp immediately after said kelp shall be delivered to the place of business designated in said license to be weighed or the approximate weight, thereof, to be determined by such method or methods as such Board shall determine, under all the circumstances, practicable and fairly accurate, and the weight thereof, so determined, shall be entered in a book etc.

Section 6. If at any time the taking or harvesting of kelp will tend to destroy or materially impair any kelp bed or beds or parts thereof, or shall tend to impair or destroy etc.

Section 9. All laws, acts, and parts of acts, in conflict herewith, are hereby repealed.

Proposition #6 1917

SEAWEED (KELP)

Concession of the Mexican government for the exploitation of seaweed in certain zones under the following conditions:

1) In territorial waters of the West Coast of Lower California, between the furthest Southern point of the Peninsula and latitude North 25°.
2) The Concessionary will establish within one year from date of this concession and in a convenient location of the Coast, a factory with sufficient capacity according to a plan to be presented opportunely for approbation.
3) The duration of this permit will be for 3 years after factory has been constructed.
4) The concessionary has the right to renewal of this permit, if he observes the laws and stipulations of this concession and keeps his factory in good shape.
5) The concessionary will pay to the federal government 25 cents oro nacional for each ton of wet seaweed extracted and shall extract a minimum of 1000 tons per year.
6) The cutting of seaweed shall start at middle of July or after the spores shall be separated from the plant for her propagation, in order to conserve her. The cut shall be made up to 2 meters from the upper extremity of the plant in order to conserve the plant and avoid damage to the brood and growth of the fish.
7) Sixty days are allowed for payment of the minimum tonnage from the date this concession enters in vigour; on default this concession is void. Payment for excess tonnage will be made when the extracted seaweed shall be presented at the Custom House, the concessionary shall choose opportunely.
8) The concessionary shall contribute for inspection expenses with the amount of 5 cents oro nacional per ton advancing the corresponding amount for the minimum tonnage as per clause 7 and pay on the excess at the same time as stipulated in clause 7.
9) The department of the secretary for Industry, Commerce & Labor has the right to inspect at whatever time the exploitation and the concessionary will give all the information and help necessary.
10) This concession is only for the exploitation of seaweed and the government reserves itself the right for any other class of exploitation.
11) The concessionary may organize a company according to the laws of Mexico for the exploitation of seaweed, object of this permit, but the government will approve the charter, by which the Company takes over all the obligations of this concession, before the transfer may be effected. In no case this concession may be transferred to a foreign Government or State or agent of either, or to a private individual, not of Mexican nationality; any such infringement will render this concession void.

Proposition #6

SEAWEED (KELP)

Concession of the Mexican government for the exploitation of seaweed in certain zones under the following conditions:

1) In territorial waters of the West Coast of Lower California, between the furthest Southern point of the Peninsula and latitude North 28°.

2) The Concessionary will establish within one year from date of this concession and in a convenient location of the Coast, a factory with sufficient capacity according to a plan to be presented opportunely for approbation.

3) The duration of this permit will be for 5 years after factory has been constructed.

4) The concessionary has the right to renewal of this permit, if he observes the laws and stipulations of this concession and keeps his factory in good shape.

5) The concessionary will pay to the federal government 25 cents oro nacional for each ton of wet seaweed extracted and shall extract a minimum of 1000 tons per year.

6) The cutting of seaweed shall start at middle of July or after the spores shall be separated from the plant for her propagation, in order to conserve her. The cut shall be made up to 2 meters from the upper extremity of the plant in order to conserve the plant and avoid damage to the brood and growth of the frah.

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12) The concessionary shall employ at least 90% of workmen of Mexican nationality and shall give preference under equal conditions to Mexicans for the higher employments.
13) This concession expires on non-fulfillment of its stipulations. On infringement of clause 11, the concessionary will loose the products already extracted as well as the buildings, machinery, utensils and other objects used in the exploitation.
14) The expiration of this concession shall be declared by the Secretary of Industry, Commerce and Labor, but before the concessionary will be given a certain time to explain.
15) The concessionary shall transform within Mexico the seaweeds and not export them in their natural state and shall give preference of sale to the Mexican government, if so required.
16) The concessionary shall give all the data to the said Secretary, when requested so, on the progress of the exploitation and shall give samples of materials and converted products to him.
17) This concession shall expire, if the above department proves, that the concessionary or any partner of his in this Company shall use the facilities granted by this permit to fight in any form against the government or institutions of the Republic or the States.
18) The revenue stamps for this concession are for account of the concessionary. Mexico City, May 4th, 1918.

The Secretary,

A. J. PANI

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The Secretary,

A. J. PANI

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

INVESTIGATION OF FERTILIZER RESOURCES.

Feb.5th 1917.

L.H.Thompson,

Longbeach Cal.

My dear Thompson:

I was sorry that I was unable to get up last Thursday. The facts of the case I had bearly gotten off the train from Sacramento and was to meet Dr.Burd from the University and take him around so that he might be of assistance to us regarding the kelp bill # A S 73. I really wanted to be there for you probably have things stirring that I am not on to at this time.

By the way, I am afraid that my clerk he e did an impolite thing altho I hope the telegraph people did not send it so. By telephone after getting your telegram, I ordered it answered and on my return found that the clerk hac ordered it sent collect in line with my usual order to do so as usually a message is surer of being delivered. I trust the operator did not send it so, but if they did accept my apologies.

I hope to get up your way the last of the week and take up several matters concerning the legislative program. I shall hope to see all the men interested when I come.

Sincerely yours,

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

INVESTIGATION OF FERTILIZER RESOURCES.

Feb.5th 1917.

Chief, Bureau of Soils,

Washington D.C.

Dear Sir:

On the first of the month, I returned from Sac ramento where I have been in the interests of legislation for our Institution. At the same time I looked after the legislation for the kelp industry. After a conference with all the presons concerned I was able to assure the Fish and Game ~~people~~ Commission that there was no disposition on the part of any of the kelp manufacturers to have the Bureau subject to the privelege or license tax. The only thing that all agreed upon was that the Fish and Game Commission sh-ould have control of the beds and only to fthis extent would there be any restrictions placed upon the Bureau. As a clearing house this will serve to be of benefit to the Bureau and I anticipate that you will agree that this is a wise precaution. Only the heartiest cooperation is to be expected from all interested.

The bill was introduced as Assembly Bill # 73 by Mouser. It was reported out of committee before I left but was then reported back. As things stand now, I anticipate no difficulties in the passage of the bill. The only opposition that I fear is from Santa Barbara County where the blue bloods are giving some intervieus to the public press. As I understand that Dr. urrentine is now there, he undoubtedly can take care of that situation.

Today I took a boat and sent the time following the cutting of 5 harvesters on the La Jolla beds. They are cutting from three to five feet in depth and at present seem to be getting nearly all the kelp as there was very little drift kelp in sight. According to report the

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

INVESTIGATION OF FERTILIZER RESOURCES.

beaches are not now getting any drift kelp .ocally from the cutting. It was an interesting sight to watch our local fleet. They have been her for about ten days so I am told. They use some ten to twelve boats and work day and night. The boa ts will now move north and thence to Clemen Island.

On Friday I visited the Hercules and Swift Plants. They are working at full blast at present. Hercules is using about 1000 tons daily and their entire plant seems to be running at top speed. They are shipping about one car of KCl. per week. They are enlarging some parts of their plant materially and seem to be making a fair success of parts of their rocess altho some parts are still in the experimental stages. However they do feel that they are accomplishing advance steps and that they are on the possible path to success.

The legislature is now in recess and will reconvene on the 26th. I shall probably be in Sacramento during the second session and will try to assist the kelp bill in getting through.

Sincerely yours.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

INVESTIGATION OF FERTILIZER RESOURCES.

Feb. 5th 1917.

Dr.J.W.Turrentine,

Santa Barbara Cal.

My dear Turrentine:

Through hearsay, I understand that you are in Santa Barbara. Glad that you are out here and here's to your success. I just returned f from Sacramento and saw the bill entered for kelp regulation. The main change was that on account ofthe Santa Barbara Co. action, they r raised the ante to 2½¢ per wet ton. The Bureau was relieved of all privelege and license tax. It is still under the control of the Fish and Game Commission. This is for your own best interest, I am sure though as you will find out in the longrun. It is no attempt to butt in to your game but to standardize the control so that there will be no misunderstanding on the part of anyone. Don't worry about co-operation, you will get it in more ways than you had hoped for and with a m much freer spirit than you expect.

Now for the insides of the double cross as you feel towards the San Diego Co.s. They feel the other way about it and that is that you gave them the double cross when you went before a Co. Board of Supervisors and put over a deal with them after it was decided in the first meeting held in Los Angeles that the Co. Supervisors sh uld be ignored. They however are not up in the air at all but are anxious to assist you in every way possible. My observation is that all the kelp people now interested here in the big companies are mighty well worth while and that they are a mighty square lot. All one needs to do with them is to state what one is going to do and if they agree they say so and if they don't they talk right out in meeting but no ill feeling shown

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

INVESTIGATION OF FERTILIZER RESOURCES.

Reaaly Turrentine the only people that I am afraid of is the Santa Barbara bunch but I don't know them and you do so youknow what to count on. With the trend of present events, I feel that there should be the heartiest co-operation on the part of everyone to get the kelp situation settled for the greatest good to the country. Any thing that I can do here or at Santa Barbara, count me in for. If the crisis is here that I am afraid is it is the duty of every man to do what he can for the general cause. I might do something in this line and if I can I'm ready to do so. We all feel the same about it so forget the past in vieu of the future and with one big push let's try to get our end of the work where it will count if it has to altho we all hope that real war may yet be avoided.

Trusting that you will call on me for whatever I can do to assist, I am

Sincerely yours,

C O P Y .

University Station, Seattle, Wn.

February 8, 1917.

Mr. B. Haagensen,

South Bend, Washington.

Dear Sir:

In compliance with your request of November 14th I herewith submit report of the analysis of kelp ash as made by my assistant, L. L. Davis:

ANALYSIS OF KELP ASH.

Moisture (H_2O)	11.3 %
Volatile matter)carbonates, organic matter, etc.)	4.6 %
Iron and Alumina (Al_2O_3 + Fe_2O_3)	7.5 %
Soda (NaCl)	18.5 %
Potash KCl)	57.2 %

Very truly yours,

(Signed) H. K. Benson.

(NOTE: The matter referred to above as "kelp ash" is in fact ash of sea grass growing in Willapa Bay, Washington)

501 B

E. C. J.

DEPARTMENT OF COMMERCE
BUREAU OF FISHERIES

San Diego, California,

February 8, 1917.

Captain W. C. Crandall,
Scripps Institution for Biol. Research,
La Jolla, California.

Dear Sir:

The Bureau has asked us about the fees or licenses which are required of those firms engaged in cutting kelp, and I am writing at the request of Mr. Johnston for any information on this subject which you may have. We have heard that some action in regard to it is expected at the next legislature. Any data that you can give us will be greatly appreciated.

Respectfully yours,

F. P. Shafer
Fishery Expert.

% Premier Packing Co.

DEPARTMENT OF AGRICULTURE,
BUREAU OF CHEMISTRY,
WASHINGTON, D. C.

ADDRESS REPLY
CHIEF, BUREAU OF CHEMISTRY,
AND REFER TO

FEB 14 1917

Scripps Institution for Biologic Research,

La Jolla, California.

Gentlemen:

The Bureau is in receipt of a package, bearing your name and address, marked "Shore Kelp". As no communication has been received regarding same, it is requested that you state the purpose for which it was submitted.

The Department is frequently requested to make analyses of foods, drugs, waters, insecticides, and other miscellaneous products. No appropriation has been provided for making analyses of any products except those of which the Department itself procures samples in the course of its official work. Consequently, the Bureau would be without authority to analyze the article for you.

The article submitted will be returned to you upon receipt of the necessary postage, 24 cents, or by express collect, if preferred. If no such request is received from you within ten days from the date of this letter it will be presumed that you do not desire the return of the sample and it will be destroyed.

The Bureau of Soils, of this Department, has studied the question of extracting potash from kelp and has pub-

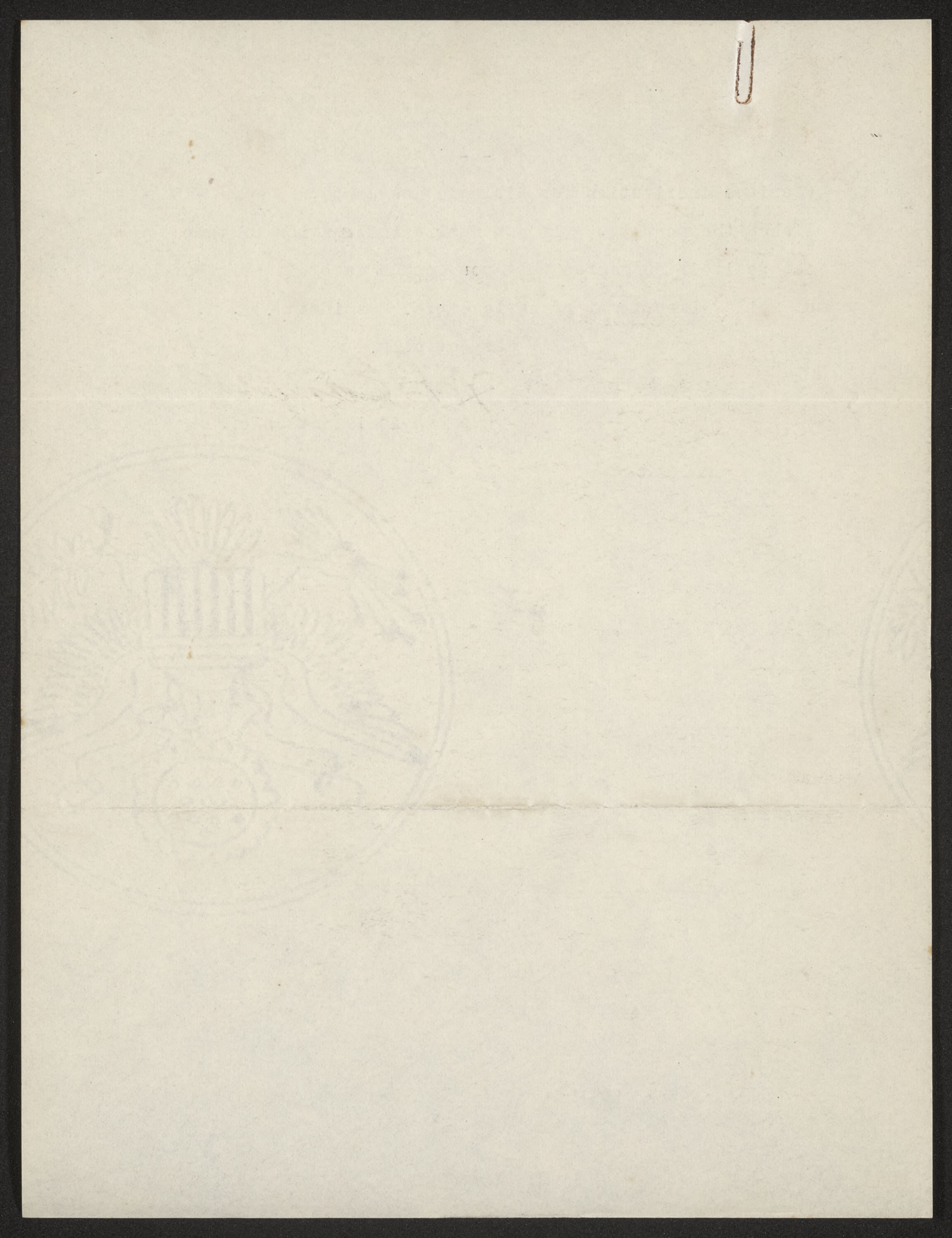
(Scripps Institution for Biologic Research).

lished the results. If you desire information of this nature it is suggested that you communicate with the Bureau of Soils, Department of Agriculture, Washington, D. C.

Respectfully,

H. G. Campbell

Assistant Chief.



THE LORNED MANUFACTURING COMPANY

INCORPORATED

MAKERS OF

POTASH AND FERTILIZERS

G. W. SIMMONS, PRESIDENT
L. H. THOMPSON, VICE-PRES. [redacted]
A. H. BRYANT, VICE-PRESIDENT
L. S. HASLAM, TREASURER
EDW. J. PORTEOUS, ASST. TREASURER
GEO. B. HARRIS, SECRETARY

1724 WHITEHALL BUILDING
NEW YORK CITY
910 SPRUCE STREET
ST. LOUIS
FACTORY AT
LONG BEACH, CAL.
FACTORY AT
SUMMERLAND, CAL.

Long Beach, Calif.,
February 15, 1917.

Capt. W. C. Crandall,
c/o Scripps Institute,
La Jolla, California.

Dear Captain Crandall:

Would it be asking too much of you to give me the date that the Point Loma and La Jolla kelp beds were laid aside after being all cut clean, also the date on which work was resumed by the various harvesters, and the date that they again quit owing to kelp being exhausted? Also the tonnage they cut as near as you can find out.

We will appreciate your kindness very much.

Very truly yours,

Edw. J. Porteous

EJP*ELB

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THE SCRIPPS INSTITUTION FOR BIOLOGICAL RESEARCH
OF THE
UNIVERSITY OF CALIFORNIA

LOCATED AT LA JOLLA
NEAR
SAN DIEGO, CALIFORNIA

LA JOLLA, CALIFORNIA,

Feb.20th 1917.

Mr.Edw.J.Porteous,

Longbeach Cal.

My dear Porteous:

Your letter of the 15th is at hand.

I cannot give you the exact date that the Point Loma and La Jolla beds were cut and left but it was about the 15th of Sept.

They began to cut again on Dec.30th.

Point Loma was then cut until Jan.21st.

Ocean Beach until Jan.23rd.

La Jolla until Feb.6th.

Since then Swifts have been cutting at Tia Juana.

Hercules have been cutting between ~~Point~~- La Jolla and San Juan Point.

About five days averaged out for bad weather.

Total cut would run between 30 000 and 35 000 tons wet kelp.

Trusting that this will be of asistance to you and that the proper assistance is being gotten by the Association with the varioous companies and chambers of commerce, I am

Sincerely yours,

W.E. Ritter

C O P Y

THE LORNED MANUFACTURING COMPANY

Long Beach, Calif.,
February 21, 1917.

Mr. H. Watson,
Swift & Company,
San Diego, Calif.

Dear Mr. Watson:-

Have you had an opportunity yet to discuss with Hercules people the question of the increase in the State tax provided in the pending Mouser Bill from 1¢ as agreed at the meetings to 2½¢ per wet ton? As I understand it, the State has refused to do anything in this interest, and this bill now provides that the kelp companies are to pay the entire cost of this kelp regulation. Inasmuch as all of us put together pay a considerable amount of money into the State, it seems to me the State ought to meet us half way. I feel this way particularly in view of the Senate Bill #580 introduced by Mr. Luce, which provides a State appropriation of $50,000 for study of kelp and fish to be conducted through the Scripps Institution. It seems to me that $10,000 or $15,000 of this money ought to be used to buy patrol boats for the Commission so as to equip them to carry on the kelp regulation provided for in the new law of a tax of 1¢ per wet ton as agreed at all of our meetings. That is the opinion of all of the kelp people here. I would like to know how you feel about it.

Very truly yours,

L. H. THOMPSON

Vice-President.

(C O P Y)

La Jolla, California, March 1, 1917.

Hon. W. F. Chandler,
Fresno, California.

My dear Mr. Chandler:

Senator Luce informs me that you will not be able to come to the Scripps Institution to consider Senate Bill 580, and I am taking this opportunity to point out features of the bill which make it important for the present legislature to consider.

The State of California owns along its coast an area of ocean 800 miles long and three miles wide; and within this area there is an unknown quantity of valuable animal and plant life.

Little money has been made available by the state for the investigation of marine life, but of late industries have been developing which use the animal and plant life of the sea without regard to the ultimate effect on supply. These industries are ocean-fishing and kelp-harvesting. Certain proposed legislation, among the marketing bills, would still further exploit the fish supply.

If the State of California would avoid such abuses in these industries as have occurred in the past in regard to fur-bearing seals, salmon, trout and ducks, it must undertake a study of the whole question, and it should begin at once.

Two considerations seem to demand this--justice to the future citizens of the state who will look more and more to the sea as a source of meat supply; and justice to the industries themselves, which should be so regulated as to have a chance for permanency.

If the state permits ruthless exploitation of the fish and kelp in its ocean waters, it will be doing an irreparable wrong.

Convinced of this fact, Senator Luce and I, after conferring with men at the head of the fish and kelp industries, drew up Senate Bill 580 as an attempt at conservation.

The Scripps Institution for Biological Research has done a good deal of investigating off the coast of southern California, has the equipment necessary, and has men on its staff who would not be personally interested in profit from such study. Therefore it seems logical that this institution should do the work for the state.

Within the last few days results of several years' investigation have been gotten into form which we have reason to believe will be markedly instrumental in determining the abundance of fishes.

However, the point at issue is not where the work should be done, but that it should be done, and at once.

Trusting that you will call upon me for facts or figures that you wish, I am

Very sincerely yours,

(Signed) W. C. Crandall,

Business Manager.

WCC+FT

(C O P Y)

La Jolla, California, March 1, 1917.

Hon. W. F. Chandler,
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If the State of California would avoid such abuses in those industries as have occurred in the past in regard to fur-bearing seals, salmon, trout and ducks, it must undertake a study of the whole question, and it should begin at once.

Two considerations seem to demand this--justice to the future citizens of the state who will look more and more to the sea as a source of meat supply; and justice to the industries themselves, which should be so regulated as to have a chance for permanency.

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Business Manager.

WCC+FT

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OF THE
UNIVERSITY OF CALIFORNIA

LOCATED AT LA JOLLA
NEAR
SAN DIEGO, CALIFORNIA

LA JOLLA, CALIFORNIA,

March 5, 1917.

Hon. Henry W. Young,
Sacramento, California.

My dear Mr. Young:

I am taking this opportunity to inform you concerning certain features of Senate Bill 580, introduced by Senator Luce, which make it important for the present Legislature to consider.

The State of California owns along its coast an area of ocean 800 miles long and three miles wide; and within this area there is an unknown quantity of valuable animal and plant life.

Little money has been made available by the state for the investigation of marine life, but of late industries have been developing which use the animal and plant life of the sea without regard to the ultimate effect on supply. These industries are ocean fishing and kelp harvesting. Certain proposed legislation, among the marketing bills, would still further exploit the fish supply.

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OF THE
UNIVERSITY OF CALIFORNIA

LOCATED AT LA JOLLA
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SAN DIEGO, CALIFORNIA

LA JOLLA, CALIFORNIA,

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Very sincerely yours,

W C Crandall

Business Manager.

WCC:FT

March 5, 1917.

Senator W. F. Chandler,
Capital Post Office,
Sacramento, California.

Dear Sir:

We, the undersigned Kelp products manufacturers of California, at a special meeting held in Los Angeles, March 5, 1917, unanimously endorsed Senate Bill #580, appropriating $50,000 for Kelp and Fisheries investigation by the Scripps Institution.

The Kelp manufacturers have spent more than $4,000,000 in California thus far, and these industries are putting substantial sums of money into circulation every month in addition to their State, County and City taxes. We believe, therefore, that the industry is of value to California and is worthy of encouragement.

With one or two exceptions, the gross receipts from operations have not yet paid operating expenses, without including any charge for depreciation of plants and equipment. The manufacturers hope, ultimately, to make reasonable profits by standardizing and systematizing the methods of harvesting and operating their factories efficiently. We are interested in proper legislation to conserve the

Kelp supply by proper regulation, and we desire also such assistance as can be given us by further study of Kelp growth such as we believe will result from the work proposed to be done under the provisions of Senate Bill #580, and we respectfully urge your support of that measure.

Respectfully yours,

HERCULES POWDER COMPANY
BY Herbert Talley

SWIFT & COMPANY KELP WORKS
BY H. Watson

SEA PRODUCTS COMPANY
BY Howard W. Judson

PACIFIC PRODUCTS COMPANY OF CALIFORNIA
BY George K. Ennis

DIAMOND MATCH COMPANY
BY Chas. A. Piper

NATIONAL KELP POTASH COMPANY
BY C. E. Walker

LORNED MANUFACTURING COMPANY
BY L. H. Thompson

OCEANIC ENGINEERING CORPORATION
BY Howard W. Judson

March 5, 1917.

Senator E. A. Luce,
Capital Post Office,
Sacramento, California.

Dear Sir:

We, the undersigned Kelp products manufacturers of California, at a special meeting held in Los Angeles, March 5, 1917, unanimously endorsed Senate Bill #580, appropriating $50,000 for Kelp and Fisheries investigation by the Scripps Institution.

The Kelp manufacturers have spent more than four million dollars in California thus far, and these industries are putting substantial sums of money into circulation every month in addition to their State, County and City taxes. We believe, therefore, that the industry is of value to California and is worthy of encouragement.

With one or two exceptions, the gross receipts from operations have not yet paid operating expenses, without including any charge for depreciation of plants and equipment. The manufacturers hope, ultimately, to make reasonable profits by standardizing and systematizing the methods of harvesting and operating their factories efficiently. We are interested in proper legislation to conserve the

Kelp supply by proper regulation, and we desire also such assistance as can be given us by further study of Kelp growth such as we believe will result from the work proposed to be done under the provisions of Senate Bill #580 and we heartily endorse this bill introduced by you.

Respectfully yours,

HERCULES POWDER COMPANY
BY Herbert Talley

SWIFT & COMPANY KELP WORKS
BY H. Watson

SEA PRODUCTS COMPANY
BY Howard W. Judson

PACIFIC PRODUCTS COMPANY OF CALIFORNIA
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NATIONAL KELP POTASH COMPANY
BY C. E. Walker

LORNED MANUFACTURING COMPANY
BY L. H. Thompson

OCEANIC ENGINEERING COMPANY
BY Howard W. Judson

Legislation

(COPY)

March 5, 1917.

Hon.
Sacramento, Calif.

Dear Sir:

We beg to call your attention to Assembly Bill #73, which is now in the hands of your Fish and Game Committee. At the invitation of the State Fish and Game Commission and representatives of the U. S. Department of Agriculture the Kelp manufacturers of California met with representatives of the Commission in several confdrences for discussion of a State Kelp law. It is as important to the Kelp manufacturers as it is to the State to protect and conserve the Kelp supply by legal regulation, and the Kelp Manufacturers' Association endorses this bill. We wish to call your attention, however, to the fact that the Kelp industry is as yet in a very crude state, and changes are constantly being made in the methods of harvesting and handling the Kelp. Appreciating this, the State Fish and Game Commission agreed with the Kelp manufacturers upon a tax of 1¢ per wet ton (which is equal to 10¢ per dry ton) of Kelp harvested, and that this provision for such a tax would be embodied in the Bill.

Since this agreement between the manufacturers and the Fish and Game Commission, there has been some suggestion at Sacramento that this tax of 1¢ per wet ton may not be sufficient; or that, if it is all that the industry can pay at this time, it may not be sufficient at a later date. To meet this situation a special conference of the manufacturers and the representatives of the Fish and Game Commission was set for March 5, 1917, and pepresentatives of the Scripps Institution of La Jolla were also invited to be present. The representatives of the Commission could not attend, but the conference of the manufacturers resulted in the enclosed suggestion addressed to the Fish and Game Committee of the Assembly after first receiving the approval of the Fish and Game Commission.

The present undeveloped state of the Kelp industry makes it very difficult to fix at this time a fair tax as well as to prescribe definite and permanent rules--they may fit a case at this moment, and yet may not fit it at all six months or a year hence. So the Fish and Game Commission and the manufacturers have agreed that it is best for all interests con-

cerned to make the law general and to put on the Commission the responsibility and authority for making rules and regulations that can be changed to fit the requirements as the industry is developed, and to set a tax according to the needs of the situation and the ability of the manufacturers to pay.

We respectfully urge you to support Assembly Bill #73, modified to embody the suggestion regarding tax as set forth in the enclosed letter.

Very truly yours,

PACIFIC KELP MANUFACTURERS' ASSOCIATION

BY W. E. Privett

Secretary.

L. H. THOMPSON
PRESIDENT

C. A. PIPER
VICE-PRESIDENT

W. E. PRIVETT
SECRETARY-TREASURER

PACIFIC KELP MANUFACTURERS' ASSOCIATION,

LONG BEACH, CAL. March 5, 1917.

Fish and Game Committee of the Assembly, Mr. C. W. Lyon, Chairman
Sacramento, California.

Gentlemen:

We the undersigned manufacturers of Kelp products, in meeting today, regret that the representatives of the Fish and Game Commission could not meet with us in response to our invitation to discuss further the question of the fair and proper rate of tax to be placed on Kelp harvested under the proposed Kelp law, Assembly Bill #73.

The manufacturers of Kelp products feel the need for a proper State Law in the interest of conservation of the Kelp supply. As shown in our former conferences with the Commission, of which conferences the present Assembly Bill #73 is the result, we do not oppose just taxation. We heartily offer our cooperation and assistance to the Commission in the formation of adequate rules and regulations as provided in the Bill and the enforcement of these rules and regulations under the law. There seems to be a popular misapprehension, however, in regard to the Kelp industry. Instead of making huge profits, because of the present high price of potash, due to the War, the industry as a matter of fact is not yet on a profitable basis.

With one or two exceptions the gross receipts from operations have not yet paid operating expense, without including

any charge for depreciation of plants and equipment. In point of volume of business, over 95% of the Kelp business to date has been at an actual operating loss. The manufacturers hope ultimately to make reasonable profits by standardizing and systematizing the methods of harvesting and operating the factories efficiently. As yet, however, the industry is in an experimental stage, so undeveloped that it cannot afford more than a very nominal tax, and this only in the interest of proper regulations to conserve the kelp supply.

When it is considered that more than four million dollars has been spent in California by Kelp manufacturers, and that these industries are paying State and County taxes and putting substantial sums of money into circulation every month, it is fair, we believe, to encourage the extension of this still undeveloped industry rather than to discourage it by making the tax a burden.

We recommend, therefore, that instead of inserting in Assembly Bill #73, now in the hands of your Committee, a fixed amount per wet ton of Kelp harvested as a tax, a provision be substituted authorizing the California State Fish and Game Commission to fix a tax under the law between a minimum of one cent per wet ton and a maximum of two and one-half cents per wet ton.

As we have worked with the Commission in formulating this Bill, we offer our cooperation in enforcing it. All of the manufacturers have boats and other floating equipment. The Deputies of the Commission can always get the use of boats of the manufacturers in the different districts for their work of inspec-

tion, and we believe that by cooperation with the Commission the cost of supervision and the carrying out of the rules and regulations under the proposed law can be kept within a tax of one cent per wet ton of kelp harvested.

Respectfully submitted,

HERCULES POWDER COMPANY

BY Herbert Talley

SWIFT & COMPANY KELP WORKS

BY H. Watson

SEA PRODUCTS COMPANY

BY Howard W. Judson

PACIFIC PRODUCTS COMPANY OF CALIFORNIA

BY George H. Ennis

DIAMOND MATCH COMPANY

BY Chas. A. Piper

NATIONAL KELP POTASH COMPANY

BY C. E. Walker

LORNED MANUFACTURING COMPANY

BY L. H. Thompson

OCEANIC ENGINEERING CORPORATION

BY Howard W. Judson

WILLIAM E. BROWN
CHAIRMAN: PRISONS AND REFORMATORIES COMMITTEE

THIRTY-SEVENTH DISTRICT

California Legislature

Forty-Second Session

Senate

Sacramento, Cal.
March 6, 1917

Mr. W. C. Crandall, Business Manager
The Scripps Institution for Biological Research
Of The University of California

My dear Mr. Crandall:-

I am intensely interested in your letter of the 3rd inst. and also the general work that your Biological Research Institution is carrying on.

At the present moment I am much concerned about the ruthless and unregulated harvesting of kelp. I understand that some are pulling up the kelp by the roots by means of piano wire. Do you know anything about this?

I should also like your views as to the statement that kelp cutting frightens away small fish that hide there from the larger fish and that this will probably cause the latter to migrate to other feeding grounds. I shall be glad to aid you in your work.

Sincerely yours,

William E. Brown

WEB/DHH
E

WM. S. SCOTT
TWENTIETH DISTRICT
427 NINTH AVENUE
SAN FRANCISCO

COMMITTEES:
Military Affairs (Chairman)
Agriculture
Education
Finance
Fish and Game
Labor and Capital
Municipal Corporations
Prisons and Reformatories

California Legislature

Forty-Second Session

Senate

Sacramento, California,
March 6, 1917.

Mr. W. C. Crandall,
La Jolla, Cal.

Dear Sir:

I received your letter of March third relating to Senator Luce's Bill No. 580.

I will be glad to co-operate with the Senator in passage of this measure.

Sincerely yours,

Wm. S. Scott,

WSS/IS

March 6, 1917.

Dr. J. N. Turrentine,
Los Angeles, California.

My dear Doctor Turrentine:

I was mighty sorry not to be able to see you yesterday at Los Angeles. I really anticipated that you might take the opportunity of meeting with the various men at that time, for while you are not directly interested in the problems they were discussing you are involved to a certain extent because of the county rule under which you are working at present. However, I think that will be settled shortly, so that you will not be in the unfortunate position that you are in at present. I will send you a copy of the minutes of the meeting as soon as I receive them, so that you may be informed as to what went on, and what the progress is in the legal work.

At present Mr. Watson is in San Francisco taking up certain matters in connection with his company, but also conferring with the Fish and Game Commission concerning the legislation. If he can arrange a definite meeting with the Committee on Fish and Game of the Assembly the local men will probably send a delegation to Sacramento to appear and state facts and figures concerning the kelp industry.

Locally there are several things of interest. In the first place, the Hercules Company is now cutting at San Juan Point, and will soon be working off San Clemente. Mr. Talley, Mr. Watson and myself hope to go over there within the next ten days to see what shape the beds are in after the recent storms. The bed off Point Loma seems to be coming up in very good shape, but the La Jolla bed has not shown very much. On account of rough weather I have not been able to go out to view the beds, but will do so this week.

There are some very interesting possibilities in the matter of growth that I hope to be able to demonstrate shortly, but it would be far better if several demonstrations might be run along the coast at the same time. I was thinking that possibly you might detail someone to do the experiments at Summerland, and that I could get Porteous at Long Beach and do them here myself. The experiment is to take some ordinary tile and weight them down in various parts of the kelp bed: the outside, middle, and inner portions; and then to haul them up once every two weeks at least and study them to see whether spores have attached themselves and are developing into plants.

The theory I am going on is one proposed by Doctor Setchell, that development of the spores is dependent upon the temperature of the water, and that we may expect most rapid development on the outside of the beds. The part of the experiment I have mentioned is simply to get an idea as to the time of year in which the spores are freed and begin to develop. This may be at definite periods; it may be at different temperature-periods, or it may be a more or less continuous process. After we have discovered at what time the spores ripen we shall have to get comparative data on their numbers in various portions of the field. This line of work will give some data, certainly, on the development of the kelp.

There are many other possibilities in this line, but I thought that this first one might serve as a bait to get you to come down to San Diego and go over the whole scheme. I am doing this, Turrentine, with malice aforethought. Not but that I might come up and stt you at Santa Barbara, but I think that at this time a trip by yourself down through this neck of the woods would be worth a whole lot. For one thing you can get a good deal of assistance, or at least an interchange of ideas, with the men at the Hercules and Swift plants. In a practical way they are interested in the same things you are trying to demonstrate, and they have passed through certain stages in development which cannot help being useful in organizing new work.

I hope also that you may find it possible to come and see Mrs. Crandall and myself here, and have a pleasant social visit as well as a profitable conference.

Most sincerely yours,

Business Manager.

WCC:FT

La Jolla, Calif.
March 6, 1917.

Chief, Bureau of Soils,
Washington, D. C.

Dear Sir:

Some time ago I wrote asking for some blank expense vouchers, but received only a small book of the incidental vouchers. Would you kindly have the office send the proper vouchers?

For some time I may have seemed rather remiss in sending in data concerning conditions on the coast, but during that time I have been more actively engaged than usual along lines which were allied to the development of the kelp industry. Through the co-operation of the various kelp manufacturers, the Fish and Game Commission, and a committee of the Western Division of the American Association for the Advancement of Science, a bill was consummated looking toward the control of the kelp beds and the harvesting of the same. This bill now has the endorsement of the Fish and Game Commission, of various manufacturers of kelp products, of several chambers of commerce, and of several senators and assemblymen. So far the only opposition that seems possible is that which may come from Santa Barbara County, because they have the feeling there that they would receive the revenue instead of allowing the state to have it. As I intimated in previous letters, it would be unfortunate for the counties to be given actual control of the beds, since then a Board of Supervisors might at any time enact a new ordinance which would leave the kelp industries clear out in the cold. And in a county like Santa Barbara, where the people are more interested in the climate than they are in industries I think there is little doubt but what such action might be anticipated. I think, however, that Assembly Bill 73 will pass and become the law of the state.

In connection with this bill I have been interested in Senate Bill 580, which sets aside an appropriation of $50,000 for the Scripps Institution for kelp and fisheries investigations. This bill has to do rather with the scientific research which we feel is necessary for the proper development of these industries. To a limited degree I have been

attempting to do something on this line for a number of years, but with the small amount of time at my disposal and the large amount of routine work necessary for fully developing the data, the research has naturally been incomplete. What has been done I think has been fairly accurate, with one exception, namely the estimate on the amount of kelp present. But so many more and new problems are opening up constantly in the field that I hope we shall be able to use a good-sized corps of men in this investigation. However, I am not over-optimistic about getting the state appropriation, as we were unable to have it passed by the State Board of Control, and without their sanction it is very difficult to get appropriations through.

A word concerning the work of the kelp companies in southern California; Swift and Company of San Diego are at present working only a reduced force, as they have lost all of their harvesting equipment. They have rented a small harvester from the Lornad Manufacturing Company, and are working only at night, harvesting possibly fifty or sixty wet tons daily. At the present time they are building a new harvester at the Fulton works at Wilmington, which will replace their lost boat, the Alicel, and which will probably be the latest thing in kelp harvesters.

In this connection it is interesting to note that Mr. Watson, their manager, has found that by bringing the kelp direct to their bins and there shredding it instead of shredding upon the boat and losing the bleeding, the percentage of potash present in the dry kelp is increased from 12 or 13% to 19 or 20%. Because of this apparent discovery he is going to carry on a number of experiments in harvesting along that line. This fact alone means the difference between low-grade and high-grade potash for fertilizer, and I think this is the most important thing that has been brought out recently.

The Hercules Powder Company is working at present off San Juan Capistrano, but will soon go to Clemente. They are using approximately 1000 wet tons daily. They figure that their plant is at present just about paying operating expenses. They are having a new tug built to replace the one they lost at Bird Rock a month or so ago. They were able to recover the barges that went ashore at the same time, so that their only real total loss to date is the small tug.

Blankenburg's company at Roseville, which is now practically assimilated by the National Potash and Fertilizer Company, has been doing practically nothing for the last month. At Long Beach and Wilmington the developments that arose through the refusal of Mr. Crouch of the National Fertilizer and Potash Company to enter into a gentlemen's agreement concerning the use of the Point Firmin kelp beds was amicably settled, and the beds were kept closed until the first of March. Then by common agreement all companies in that region went into the beds and began cutting. Their estimate is that they have about sixty days' cutting in sight on those beds, and by that time the Redondo beds should be ready again.

In a meeting which was held yesterday I felt that the men of Long Beach and San Pedro had gotten together a little better than they had been doing in the past. There has been some change in conditions, namely that the Lorned Manufacturing Company will have two new harvesters, made upon old hulks of steam schooners, in operation shortly, when they may expect to compete with the larger harvesters of this region. The Oceanic Products Company was unfortunate last week, and lost two barges, due to the storm and the breaking down of their tugs. Otherwise their equipment is about the same.

Yesterday I took a census of the companies present, with their total investment, that is, investment in property and wages to date. This is as follows:

Hercules Powder Company	$2,000,000
Swift and Company	1,000,000
Sea Products and Oceanic Products	[illegible]00,000
Pacific Products	[illegible]00,000
National Fertilizer & Potash Co.	75,000
Lorned Manufacturing Co.	300,000
Total	$3,775,000

Concerning the U.S. Potash and Fertilizer plant, the California Chemical Company, and the Lorned Manufacturing Company, all of which are located in Santa Barbara County, I have omitted these, as Doctor Turrentine will be in close touch with them.

Sincerely yours,

Collaborator.

State of California
EXECUTIVE OFFICE
SACRAMENTO

March 8,1917

W. C. Crandall, Esq.,
La Jolla, California
My dear Sir:

Permit me to make formal acknowledgment of the receipt by Governor Johnson of your letter of March 2nd, relative to S.B. 580.

Very truly yours,

Alexander McCabe

Private Secretary

March 8, 1917.

Mr. Carl Westerfeld, Executive,
Fish and Game Commission,
San Francisco, Calif.

My dear Mr. Westerfeld:

The meeting of the kelp manufacturers in Lost Angeles last Monday developed the fact that they are rather crimped at the present time, and that they have some pretty definite feelings about it. They are paying to the state all the taxes usually paid by corporations, and they are getting material from foundries, shops, etc., and thus indirectly making further contributions to state revenue. Within two years they have established a payroll which now amounts to $150,000 a month. They are developing a field which is more or less experimental as yet. For these reasons they feel that they should be relieved as far as possible from additional expense. They therefore propose, as you will see by the minutes which Mr. Michael will forward to you, that they should have a sliding scale of one to two and one-half cents per wet ton, this to be assessed against them for the proper supervision of the beds. They think it will be unnecessary for the state to buy a boat especially for a patrol, and propose to detailla boat whenever asked for by the Fish and Game Commission for the purpose of supervision and enforcement of the law. Their view is that kelp harvesting is in rather a different class from fishing, where a few men in a small, fast boat can go out, make a quick catch, and disappear. A kelp harvester, on the other hand, is a big, conspicuous, slow boat, that requires a long time for its operation and has to have a definite base. For this reason supervision of kelp harvesting should be a much simpler proposition than fisheries patrol. This is particularly true because the kelp men themselves are of the opinion of the Fish and Game Commission, namely, that conservation is going to be the life of their business.

I really had anticipated that there would be some fight made on the question, but after thrashing it out in various ways they came to a practically unanimous decision: simply to state the facts as they see them and then ask you to consider the matter, taking their facts into the consideration.

They endorsed Senate Bill 580, and agreed to send a representative or representatives to Sacramento at any time they may be asked to appear before a committee. If it is possible to give a definte date for them I think they will do a great deal of good in appearing and presenting facts as they stand before various committees.

In this connection, I understand there possibly will be a fight on ths bill. It is possible that a bill will be introduced from Santa Barbara county which will take the control of the kelp beds out of the hands of the Fish and Game Commission and place it in the hands of county supervisors of the various counties along the coasts of which the kelp grows. The passage of such a bill

They endorsed Senate Bill 580, and agreed to send a representative or representatives to Sacramento at any time they may be asked to appear before a committee. If it is possible to give a definite date for them I think they will do a great deal of good in appearing and presenting facts as they stand.

I understand that it is possible that a bill will be introduced from Stanta Barbara County which will take the control of the kelp beds out of the hands of the Fish and Game Commission and place it in the hands of the county supervisors of the various counties along the coasts of which the kelp grows. An attack on Assembly Bill by Santa Barbara county may also be looked for. The passage of such a bill as I have indicated would be inimical to the best interests of the state, would probably mean the discouraging of the industry, and would increase the possibilities of friction between the State Fish and Game Commission and the various counties because the counties would a little later presume to control all the oceanic fishing along their shores as well as the kelp industry. This would affect lobster fishing, clam digging, and other things that are now looked after by the Fish and Game Commission.

Very sincerely yours,

Business Manager.

WCC:FT

March 8, 1917.

Hon. William S. Scott,

Sacramento, California.

My dear Senator Scott:

Your letter of acknowledgement of my letter of March third, concerning Senator Luce's bill, number 580, is received. I am glad to know that you will cooperate with us in the consideration of this measure, and trust that your confidence may be well merited.

Sincerely yours,

Business Manager.

WCC:FT

March 8, 1917.

Hon. William E. Brown,
Sacramento, California.

My dear Senator Brown:

Your letter of March sixth is at hand, and I am very much pleased that you have brought up the question of the pulling up of the roots of kelp with piano wires. This was reported to have been done off Redondo. I was never able to find out who did it or when it was done, but I do not anticipate that there will be any further trouble from this source, becalue all of the men who are in the kelp business legitimately would immediately report anything of this character. It is as much to their interest as it is to those of the state to see that kelp harvesting is done properly. The current report about Long Beach and Redondo is that this act of piano-wire cutting was done by a couple of launches manned by Germans. I think, however, that little if anything was done, and that the whole business is more proabably a popular story than anything else. At least, I could get no real facts when I investigated the matter some time ago.

Kelp which is pulled out by the roots requires at least two years to re-establish itself in its former condition. Kelp that is cut properly, that is, within six feet of the surface, replaces itself within three to six months.

To your statement that kelp cutting frightens away the smaller fish I cannot give any positive, definite answer. However, the consensus of opinion among those who have been observing the cutting of kelp is that it is not affecting the fish in the kelp beds. Last year there was never more bait available. This bait was not found in the kelp beds, but in certain bights along the coast, where the fishermen tell me it usually appears In many ways last year was an abnormal year as far as the waters along the coast are concerned, and the apparent variation from usual conditions was just as likely the result of other factors as it was of the kelp cutting. A few years ago there was very serious discussion of the statement made by the fishermen that the gunnery practice of the warships off San Pedro and San Diego was scaring all the fish out of this part of the country. However, practice has gone on continuously since then, and still the fish come back at intervals. It is really impossible to trace the migration habits of fish to any one influence. Each factor may have something to do with it, but the whole effect is really the result of a complex of factors.

Doctor William E. Ritter, Director of this institution, is at present in Berkeley, and he is better fitted to speak on many of these subjects than I am, and any information that you may desire he will be glad to give. His address is The University of California, East Hall.

Very sincerely yours,

Business Manager.

March 8, 1917.

Senator E. A. Luce,

Sacramento, Cal.

My dear Senator Luce:

I have just received a letter from Sen. Wm. S. Scott, stating that he will gladly cooperate with you on Senate Bill 580; also a letter from Sen. Wm. E. Brown, stating that he is very much interested in the work of the Biological Station, and that he is interested in Senate Bill 580.

If it is possible, I believe it would be a good thing to have Doctor Ritter appear and give a general idea of the valme of research work before the Fish and Game committees of both the Senate and House. In this again, Ed, I have not so much in mind our own needs as I have the real question that is before the state, namely the proper conservation of its resources. Really there is one other man who could do this better in a general way than Doctor Ritter: Prof. A. O. Leuschner, Dean of the Graduate School at Berkeley. He has, possibly, a more general viewpoint than Doctor Ritter, and is also a very fluent public speaker.

Very sincerely yours,

Business Manager.

WCC/FT

COMMISSIONERS
F. M. NEWBERT
M. J. CONNELL
E. L. BOSQUI

EXECUTIVE OFFICER
CARL WESTERFELD

FISH AND GAME COMMISSION
OF CALIFORNIA

SAN FRANCISCO

Mar. 12, 1917.

MR. W. C. CRANDALL,
C/o The Scripps Institution for Biological Research,
La Jolla, California.

My dear Mr. Crandall:-

Accept my thanks for your letter of March 8th. Captain Watson called to see us a few days ago and stated that the kelp manufacturers intended sending a representative to Sacramento.

Mr. Scofield and I will be in Sacramento tomorrow and will then take up the matter of the tax with him.

With kindest regards, I am

Very sincerely yours,

Carl Westerfeld

Executive Officer.

CW/MH

HUGH J. BALDWIN
79th DISTRICT
Residence 821 Seventeenth Street, San Diego

Chairman
Public Morals Committee

Member of following Committees:
ATTACHES, COMMERCE AND NAVIGATION, EDUCATION, MUNICIPAL CORPORATIONS, WAYS AND MEANS

California Legislature

Forty-Second Session

1917

Assembly

Sacramento, California
March 12, 1917

Prof. W. C. Crandall,
La Jolla, Calif.

My dear Friend:

Your letter of the 5th at hand and contents noted. Glad to hear from you. Send me all the details that you have with references to the Senate Bill, because when it comes up on this side of the house and before the committees I want to be well posted.

Everything is humming here and it is diligence and hard work that will accomplish any ~~every~~thing.

With highest regards, I am

Very truly yours,

Hugh J. Baldwin

FRANK F. MERRIAM
70th DISTRICT
Residence 503 E. Seventh Street, Long Beach, Cal.

Chairman
Libraries Committee

Member of following Committees:
AGRICULTURE, CONSERVATION, DRAINAGE, SWAMP AND OVERFLOWED LANDS, REVISION AND PRINTING, ROADS AND HIGHWAYS, WAYS AND MEANS

California Legislature

Forty-Second Session

1917

Assembly

Sacramento, Cal.,
March 13, 1917.

Mr. W. C. Crandall,
Bus. Mgr. Scrips Inst. for Biological Research,
La Jolla, Cal.

My dear Sir:-

Your favor of the 5th inst., is received. I have read your communication with interest, being greatly in favor of the conservation of the products of the sea as well as those of the land.

I think I could favor the measure you suggest. However, I will be pleased to hear any discussion there may be on the subject when it comes up for consideration.

Since my district, which includes Long Beach, is so greatly interested in the matter of ocean fishing and kelp harvesting, I will be pleased to receive your suggestions, and will keep them in mind when this matter comes before the Assembly for consideration.

Thanking you for writing me and assuring you I will be pleased to hear from you further at any time, I am

Yours sincerely,

Frank F. Merriam

M/D

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

INVESTIGATION OF FERTILIZER RESOURCES.

Mar. 13th 1917.

Chief, Bureau of Soils,

Washington D.C.

Dear Sir:

This morning I spent several hours out on the La Jolla beds which were cut by the various kelp companies last February. The total time elapsed is about 35days. At that time the beds were cut to a depth of about 4 feet. Today the new growth was about 12-14 feet long and few of the old cut ends were in sight. These either have disappeared or possibly might be in the centers of the masses of stolons as they are growing. All of the kelp in the beds is a light olive green and the growing tips are ~~greatly~~ far more evident than I have ever seen them before. However many of the longer ones evidently have reached there growth and the grwwing tip has finished its use. The thickness of the beds is still subnormal and evidently will not become a heavy bed until more of the growing stipes that are insight have also reached their growth. The addition of these additional stipes will fill in the gaps that now exist between the different plants and make the bed appear and be heavier a little later on. However the evident result of the trip is that the beds are again re-establishing themselves. The rate of growth has averaged from 3 - 4 ins. per day since the last cutting. By May 1st the beds should be in good shape to cut again.

Yours truly

W. C. Crandall

MAX THELEN, COMMISSIONER, PRESIDENT
H. D. LOVELAND, COMMISSIONER
ALEX GORDON, COMMISSIONER
EDWIN O. EDGERTON, COMMISSIONER
FRANK R. DEVLIN, COMMISSIONER

ADDRESS ALL COMMUNICATIONS TO
RAILROAD COMMISSION OF THE STATE OF CALIFORNIA

Railroad Commission of the State of California

TENTH FLOOR, COMMERCIAL BUILDING
833 MARKET STREET
SAN FRANCISCO

CHARLES R. DETRICK, SECRETARY
W. P. GEARY, RATE EXPERT
RICHARD SACHSE, CHIEF ENGINEER
L. R. REYNOLDS, AUDITOR
P. A. SINSHEIMER, BOND EXPERT
DOUGLAS BROOKMAN, ATTORNEY

TELEPHONE—SUTTER 2260

California Chemical Co

March 13, 1917.

Mr. W. C. Crandall,

La Jolla, Cal.

Dear Clarence:-

This is to introduce Mr. James Armstrong, Engineer of the California Railroad Commission. Mr. Armstrong is interested in the production of Kelp products in a plant being constructed at Summerland, near Santa Barbara.

Mr. Armstrong will call upon you in the near future. I would consider it a favor if you would give him your kelp bulletin and maps and if not asking too much to tell him something of the processes and financial status of the other kelp companies operating upon the Southern Coast. Any information along the other allied industries will be of great value to Mr. Armstrong.

Thanking you for any courtesy shown to Mr. Armstrong, I remain,

Sincerely yours,

Herbert B. Foster

Mr. Mintz also

THE LORNED MANUFACTURING COMPANY
INCORPORATED

G. W. SIMMONS, President
L. H. THOMPSON, Vice-President
A. H. BRYANT, Vice-President
L. S. HASLAM, Treasurer
EDW. J. PORTEOUS, Asst. Treasurer
GEO. B. HARRIS, Secretary

MAKERS OF
POTASH AND FERTILIZERS

1724 WHITEHALL BUILDING
NEW YORK CITY
910 SPRUCE STREET
ST. LOUIS
FACTORY AT
LONG BEACH, CAL.
FACTORY AT
SUMMERLAND, CAL.

Long Beach, Calif.,
March 13, 1917.

Capt. W. C. Crandall,
Scripps Institution,
La Jolla, California.

Dear Capt. Crandall:

I enclose herewith copy of a letter sent out by the Association to all of the State Senators and Assemblymen, together with enclosures therein.

I sent several copies of our letter of March 5th from the Association to Mr. Talley of Hercules Powder Company. I haven't heard from Mr. Talley or what he has been able to do with the San Diego Chamber of Commerce and the papers there, but doubtless you are in touch with him and are helping the good work along. I am anxious also to hear from Mr. Watson the result of his trip to San Francisco and Sacramento.

I obtained the endorsement of the Long Beach Chamber of Commerce, and will publish our communications in the papers here as soon as the Los Angeles papers have had first crack at it, which I think under the circumstances is the best way to handle it. I have supplied Mr. Ennis with ammunition, and he is taking care of the Los Angeles City end.

I enclose also copy of a letter from the Association to Senators W. F. Chandler and E. A. Luce regarding Senate Bill #580.

Will you please show this letter to Mr. Michael as it will serve to answer his letter as well.

With best regards,

Very truly yours,

L. H. Thompson
Vice-President.

LHT*ELB

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

FWB. J
INVESTIGATION OF FERTILIZER RESOURCES.

March 14, 1917.

Capt. W. C. Crandall,
Scripps Biological Institution,
La Jolla, California.

Dear Crandall:

We have your letter of March 6, giving a general resume of the kelp situation. Your statement with regard to the shredding of kelp by the Swift Company in the plant rather than on the boat, by which they save the bleeding and increase the potash content of the dried kelp, is very interesting. We should be glad to have any corroboration of this statement which you may be able to secure, since it has been our opinion heretofore that the water which escaped when the kelp was shredded carried a negligible content of potash. We were also much interested in your statements with regard to the growth on the Point Firmin and Redondo beds, as this matter of the renewal of the beds by new growth is of course very important in the development of the kelp industry.

Very truly yours,

Frederick W. Brown

In Charge.

THE LORNED MANUFACTURING COMPANY
INCORPORATED

G. W. SIMMONS, PRESIDENT
L. H. THOMPSON, VICE-PRESIDENT
A. H. BRYANT, VICE-PRESIDENT
L. S. HASLAM, TREASURER
EDW. J. PORTEOUS, ASST. TREASURER
GEO. B. HARRIS, SECRETARY

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FACTORY AT
LONG BEACH, CAL.
FACTORY AT
SUMMERLAND, CAL.

Long Beach, Calif.,

March 15, 1917.

Capt. W. C. Crandall,
Scripps Institution,
La Jolla, California.

Dear Capt. Crandall;

I return herewith the list of members of the Legislature of the 42nd Session.

I enclose also a copy of a letter that we wrote from the Association to to each of these Legislators, and a copy of the letter that was enclosed therein, for your information. I hope that these letters will do some good.

As you doubtless know, Mr. Talley and Mr. Watson went to Sacramento from San Diego, and Mr. Judson went up from here. I also got Mr. Piper to wire his people, the Diamond Match Company, to bring what influence they could to bear in favor of the lowest possible tax that is fair and reasonable as a provision in the Mouser Bill.

Very truly yours,

L. H. Thompson

LHT*ELB

WESTERN UNION

Form 2589 J

DAY LETTER

GEORGE W. E. ATKINS, VICE-PRESIDENT NEWCOMB CARLTON, PRESIDENT BELVIDERE BROOKS, VICE-PRESIDENT

RECEIVER'S No.	TIME FILED	CHECK

SEND the following Day Letter, subject to the terms on back hereof, which are hereby agreed to

Long Beach, Calif., March 16, 1917

To Capt. W. C. Crandall,

Scripps Institution, La Jolla, California.

Returned legislators list to you yesterday. Stop. Have telegram from Judson announcing unanimous recommendation of Mouser bill by Fish and Game Committee of Assembly and requesting me to write another letter to every legislator. Stop. Please return list immediately.

L. H. Thompson.

Confirmation

SENDER'S ADDRESS FOR ANSWER

SENDER'S TELEPHONE NUMBER

ALL DAY LETTERS TAKEN BY THIS COMPANY SHALL BE SUBJECT TO THE FOLLOWING TERMS:

The Western Union Telegraph Company will receive **DAY LETTERS,** to be transmitted at rates lower than its standard telegram rates, as follows: one and one-half times the standard night letter rate shall be charged for the transmission of fifty (50) words or less, and one-fifth of the initial rate for such fifty words shall be charged for each additional ten (10) words or less.

To guard against mistakes or delays, the sender of a day letter should order it REPEATED, that is, telegraphed back to the originating office for comparison. For this, one-half the unrepeated day letter rate is charged in addition. Unless otherwise indicated on its face, THIS IS AN UNREPEATED DAY LETTER AND PAID FOR AS SUCH, in consideration whereof it is agreed between the sender of the day letter and this Company as follows:

1. The Company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery, of any UNREPEATED day letter, beyond the amount received for sending the same; nor for mistakes or delays in the transmission or delivery, or for non-delivery, of any REPEATED day letter, beyond fifty times the sum received for sending the same, unless specially valued; nor in any case for delays arising from unavoidable interruption in the working of its lines; *nor for errors in obscure day letters.*

2. In any event the Company shall not be liable for damages for any mistakes or delay in the transmission or delivery, or for non-delivery, of this day letter, whether caused by the negligence of its servants or otherwise, beyond the sum of FIFTY DOLLARS, at which amount this day letter is hereby valued, unless a greater value is stated in writing hereon at the time the day letter is offered to the Company for transmission, and an additional sum paid or agreed to be paid based on such value equal to one-tenth of one per cent. thereof.

3. The Company is hereby made the agent of the sender, without liability, to forward this day letter over the lines of any other Company when necessary to reach its destination.

4. Day Letters will be delivered free within one-half mile of the Company's office in towns of 5,000 population or less, and within one mile of such office in other cities or towns. Beyond these limits the Company does not undertake to make delivery, but will, without liability, at the sender's request, as his agent and at his expense, endeavor to contract for him for such delivery at a reasonable price.

5. No responsibility attaches to this Company concerning day letters until the same are accepted at one of its transmitting offices, and if a day letter is sent to such office by one of the Company's messengers, he acts for that purpose as the agent of the sender.

6. The Company will not be liable for damages or statutory penalties in any case where the claim is not presented in writing within sixty days after the day letter is filed with the Company for transmission.

In further consideration of the reduced rate for this special **"DAY LETTER"** service, the following special terms are hereby agreed to:

A. **DAY LETTERS** may be forwarded by the Telegraph Company as a deferred service and the transmission and delivery of such **DAY LETTERS** is, in all respects, subordinate to the priority of transmission and delivery of regular telegrams.

B. **DAY LETTERS** shall be written in plain English. Code language is not permissible.

C. This **DAY LETTER** may be delivered by the Telegraph Company by telephoning the same to the addressee, and such delivery shall be a complete discharge of the obligation of the Telegraph Company to deliver.

D. This **DAY LETTER** is received subject to the express understanding and agreement that the Company does not undertake that a **DAY LETTER** shall be delivered on the day of its date absolutely and at all events; but that the Company's obligation in this respect is subject to the condition that there shall remain sufficient time for the transmission and delivery of such day letter on the day of its date during regular office hours, subject to the priority of the transmission of regular telegrams under the conditions named above.

No employee of the Company is authorized to vary the foregoing.

THE WESTERN UNION TELEGRAPH COMPANY
INCORPORATED
NEWCOMB CARLTON, PRESIDENT

CLASSES OF SERVICE

TELEGRAMS

A full-rate expedited service.

NIGHT TELEGRAMS

Accepted up to 2.00 A.M. at reduced rates to be sent during the night and delivered not earlier than the morning of the next ensuing business day.

DAY LETTERS

A deferred day service at rates lower than the standard telegram rates as follows: One and one-half times the standard night letter rate for the transmission of 50 words or less and one-fifth of the initial rate for each additional 10 words or less. Subordinate to the priority of transmission and delivery of regular telegrams. Must be written in plain English. Code language not permissible. Telephonic delivery permissible. Day Letters received subject to express understanding that the Company only undertakes delivery of the same on the day of their date subject to conditions that sufficient time remains for such transmission and delivery during regular office hours, subject to priority of the transmission of regular telegrams.

NIGHT LETTERS

Accepted up to midnight for delivery on the morning of the next ensuing business day, at rates still lower than standard night telegram rates, as follows: The standard day rate for 10 words shall be charged for the transmission of 50 words or less, and one-fifth of such standard day rate for 10 words shall be charged for each additional 10 words or less. Must be written in plain English. Code language not permissible. Mail delivery, postage prepaid, permissible.

DEPARTMENT OF AGRICULTURE,
BUREAU OF CHEMISTRY,
WASHINGTON, D. C.

ADDRESS REPLY
CHIEF, BUREAU OF CHEMISTRY,
AND REFER TO

March 16, 1917.

Mr. W. C. Crandall,
Scripps Biological Institute,
LaJolla, Calif.

Dear Sir:

Reference is made to your letter of December 12, 1916, regarding the kelps you promised to send.

The kelps were received quite some time since and would have been acknowledged sooner except for the fact that they were not brought to the attention of the writer until just recently.

I wish to thank you very much for your kindness in gathering, drying and sending these samples to us.

Respectfully,

C. S. Hudson

Chemist in Charge of Carbohydrate Laboratory.

L. H. THOMPSON
PRESIDENT

C. A. PIPER
VICE-PRESIDENT

W. E. PRIVETT
SECRETARY-TREASURER

PACIFIC KELP MANUFACTURERS' ASSOCIATION

LONG BEACH, CAL., March 17, 1917.

To the Senators and Assemblymen
of the Forty-second Legislature:
Gentlemen:

We, the undersigned manufacturers of Kelp products, endorse Assembly Bill No. #73 as recommended by the Fish and Game Committee of the Assembly, and respectfully urge your support.

Respectfully submitted,

HERCULES POWDER COMPANY
BY Herbert Talley

SWIFT & COMPANY KELP WORKS
BY H. Watson

SEA PRODUCTS COMPANY
BY Howard W. Judson

PACIFIC PRODUCTS COMPANY OF CALIFORNIA
BY George H. Ennis

DIAMOND MATCH COMPANY
BY Chas. A. Piper

NATIONAL KELP POTASH COMPANY
BY C. E. Walker

LORNED MANUFACTURING COMPANY
BY L. H. Thompson

OCEANIC ENGINEERING CORPORATION
BY Howard W. Judson

HUGH J. BALDWIN
79th DISTRICT
Residence 821 Seventeenth Street, San Diego

Chairman
Public Morals Committee

Member of following Committees:
ATTACHES, COMMERCE AND NAVIGATION, EDUCATION, MUNICIPAL CORPORATIONS, WAYS AND MEANS

California Legislature

Forty-Second Session

1917

Assembly

Sacramento, Calif.
March 22nd, 1917.

My dear Crandall,

A row started this forenoon over the kelp bill A.B. 73 The bill passed the house yesterday but a man by the name of Polsey secured a reconsideration on the ground of the tariff &c.

The fellows - Howser &c want you to come up as an investigation will take place on Monday

Yours truly
Hugh J. Baldwin

JWT-R

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS.
INVESTIGATION OF FERTILIZER RESOURCES.
EXPERIMENTAL PLANT FOR THE EXTRACTION OF POTASH FROM KELP.
SUMMERLAND, CALIFORNIA.

March 22nd, 1917.

Prof. W. C. Crandall,
Scripps Institute for Biological Research,
La Jolla, Cal.

Dear Crandall:-

I am a long time getting to your good letters of past date relative to various matters. I have been kept so busy since coming to Santa Barbara, that I have been compelled to neglect my correspondence. I am glad to see that you are still on the job and that matters are progressing so satisfactorily with you.

I hope to be able to see you within the next few weeks, at which time I shall take up with you personally the interesting subject of collaboration between us. At present we are thoroughly occupied with prices of materials and times of delivery and have scant opportunity to consider the development of the work. When some of those numerous details are off our hands, I want to go into the matter with you in detail.

I am interested to hear of the progress of your bill appropriating $50,000 for your work, and have availed myself of every opportunity to say a good word for it. Some opposition has developed to the bill drawn up by the kelp interests, but I hear that the bill is liable to pass.

When you pass this way be sure to stop off for a visit. Later I will hope to have something of sufficient interest to justify a special trip.

With kind personal regards to you and Mrs. Crandall,

Yours very truly,

J. W. Turrentine

In Charge.

THE LORNED MANUFACTURING COMPANY
INCORPORATED

G. W. SIMMONS, PRESIDENT
L. H. THOMPSON, VICE-PRESIDENT
A. H. BRYANT, VICE-PRESIDENT
L. S. HASLAM, TREASURER
EDW. J. PORTEOUS, ASST. TREASURER
GEO. B. HARRIS, SECRETARY

MAKERS OF
POTASH AND FERTILIZERS

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NEW YORK CITY
910 SPRUCE STREET
ST. LOUIS
FACTORY AT
LONG BEACH, CAL.
FACTORY AT
SUMMERLAND, CAL.

Long Beach, Calif.,
March 22, 1917.

Capt. W. C. Crandall,
Scripps Institution,
La Jolla, California.

Dear Capt. Crandall:

You have doubtless talked to Mr. Watson or Mr. Talley in regard to their trip to Sacramento, and have learned the good news that the Fish and Game Committee of the Assembly unanimously reported favorably on our Kelp bill.

At Mr. Judson's suggestion I wrote another letter to each of the Assemblymen and Senators, short and to the point, copy of which I enclose for your information. I also return your list of Legislators.

It looks to me as though there remains practically no opposition to the bill. I understand that the opponents of the bill who introduced a substitute bill and amendments of it before the Committee in Sacramento last week have seen the light, and come around to the other side.

Very truly yours,

L. H. Thompson

Enclosures 2
LHT*ELB

GT:Br

ADDRESS: "COMMANDANT, TWELFTH NAVAL DISTRICT,
ROOM 420, NEW CUSTOM HOUSE, SAN FRANCISCO, CAL."

440-6-B

TWELFTH NAVAL DISTRICT
SAN FRANCISCO, CALIFORNIA
March 27, 1917

CONFIDENTIAL

Mr. W. C. Crandall,
La Jolla, Calif.

Dear Sir:-

Your letter of March 24th received, and I wish to thank you for the list of KCL plants.

Have also taken pleasure in putting Mr. Ralph P. Merritt's name on my list.

Thanking you again for your assistance I am,

Sincerely yours,

G. Gaylord,

Commander, U.S.Navy,
Aid for Information.

THE LORNED MANUFACTURING COMPANY
INCORPORATED

G. W. SIMMONS, PRESIDENT
L. H. THOMPSON, VICE-PRESIDENT
A. H. BRYANT, VICE-PRESIDENT
L. S. HASLAM, TREASURER
EDW. J. PORTEOUS, ASST. TREASURER
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FACTORY AT
LONG BEACH, CAL.
FACTORY AT
SUMMERLAND, CAL.

Long Beach, Calif.,
March 31, 1917.

Dr. W. C. Crandall,
Sacramento Hotel,
Sacramento, Calif.

Dear Dr. Crandall:

I have just received the following telegram from you from Berkeley:

"Do not believe it is necessary for you to come up Monday. Saw Newlan yesterday and he is sending accountants to San Diego to check up Hercules. Stop. Argabrite says Lalley Lowenthal and I will be enough. Stop. Your man seen and is O.K."

You do not so state, but I assume that if an auditor is being sent down to San Diego to check up the Hercules books, the Revenue and Taxation Committee will not take any definite action until his report has been turned in. If that is a fact, there will, of course, be no use in my going up for the meeting on Monday because that meeting will not be a final one.

Who is Lalley Lowenthal? I assume Lalley is Talley (your own private code no doubt), but who is Lowenthal? It certainly doesn't sound like a Kelp man.

I have wired Argabrite as follows:

"Professor Crandall wires Neylan sending accountants to SanDiego to check up Hercules books and suggests unnecessary I come Sacramento Monday.Stop. Please advise me by wire Collect whether Revenue and Taxation Committee meeting will be held Monday and decision made or matter continued until receipt of Accountant's report. Stop. Matter too vital to our existence to warrant my absence from final Committee meeting."

I am telling you this to keep you posted. I did this because I thought possibly you and Talley were both out of town and I couldn't reach you with a wire. So far I haven't heard from Argabrite, but have planned to take your advice andnot come up for the meeting Monday unless in the meantime I get further advice from you to come. Thanks very much for notifying me.

March 31, 1917.

I did considerable on this matter in San Francisco last Thursday. On your way down from Sacramento, if you can stop over here, I would like to go over it with you if the matter is still unsettled at that time.

Very truly yours,

L.H. Thompson

LHT*ELB

Form 1204

CLASS OF SERVICE	SYMBOL
Day Message	
Day Letter	Blue
Night Message	Nite
Night Letter	N L

If none of these three symbols appears after the check (number of words) this is a day message. Otherwise its character is indicated by the symbol appearing after the check.

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

CLASS OF SERVICE	SYMBOL
Day Message	
Day Letter	Blue
Night Message	Nite
Night Letter	N L

If none of these three symbols appears after the check (number of words) this is a day message. Otherwise its character is indicated by the symbol appearing after the check.

RECEIVED AT

14BY F 32 GOVT

A WASHINGTON DC MAR 24 1917

W C CRANDALL

LAOLLA CALIF

SECRETARY HANDING STRONG TELEGRAM TO GOMERNOR ON KELP

TAX TURRENTINE DIRECTED TO GO TO SARRMENTO YOU ARE AUTHORISED

TO GO IF PRESENCE NEEDED

WHITNEY

9A

Legislation

La Jolla, Calif.
April 6, 1917.

Chief, Bureau of Soils,
U.S. Dept. of Agriculture,
Washington.

Dear Sir:

In accordance with your telegram of instruction, and believing that it would be particularly worth the Department's time for me to go to Sacramento in the interests of Assembly Bill 73, I left on the morning of March 25, going directly to Los Angeles. I remained there that afternoon, in conference with Mr. Fisher of the Pacific Products Co., Mr. Prevett of the Sea Products Co. and the Oceanic Engineering Co., and Mr. L. H. Thompson of the Lorned Manufacturing Co. We canvassed the situation carefully, and they gave me their latest figures on plant and equipment cost, total harvesting tonnage, operating costs, and various other facts concerning the inside workings of their businesses. Previous to this I had obtained similar data in San Diego from the Hercules Powder Co. and from Swift and Co. On my way to Sacramento I tabulated all this data, and with the permission of all concerned worked this over into summaries which I used in the discussions on the bill.

I arrived in Sacramento about 9:30, Monday the twenty-sixth, and immediately had a conference with Mr. Baldwin, Assemblyman from our district, who has charge of the bill. He told me that after the bill had passed the Assembly, a letter had been written, on February 9, to Assemblyman Burke of Santa Ana by Mr. Hector Alliott of the Southwest Institute, that contained a reference to a twency-cent tax per wet ton on kelp. As a result of this statement, Mr. Posley of Tehama County suddenly conceived the idea that in the sale of wet kelp was an opportunity that the State could not possibly pass, and that here was a source for a large amount of revenue for the educational funds of the State. He therefore asked that the bill be re-referred to the Revenue and Taxation Committee for their consideration. Naturally all assemblymen are anxious to get money from the State, and so I found that what Mr. Baldwin told me on my arrival was quite true: that the Assembly expected to pass quite a heavy tax on kelp. I immediately got acquainted with Mr. Posley of Tehama County, took him over to the hotel and talked with him about two hours that noon on kelp, its harvesting, and

data concerning profits, etc. But it seemed that Mr. Posley was not only interested in getting money from the State, but he was just as much interested in taking a crack at the Fish and Game Commission. As a result of this intense interest on his part he was bound to to take the anticipated revenue away from the Commission. This revenue, as you know, was proposed merely for the purposes of patrol and investigation of kelp, and naturally would come under the supervision of the Fish and Game Commission. Doctor Turrentine arrived that afternoon, and then he and I both had a talk with Mr. Posley, and again Monday evening we had a talk lasting several hours. But the longer we talked the farther we seemed to be from getting anywhere with Mr. Posley. In the meantime I had talked things over with Senator Luce of our district, and he and I decided on various men who should be approached on the subject, and he very kindly introduced me to many of them. So at all times and places I began to talk the kelp industry.

The following noon Doctor Turrentine and I met with Mr. Aggabrite, Chairman of the Revenue and Taxation Committee of the Assembly, and went over the whole situation carefully with him. In the meantime various representatives of the kelp industry, namely Mr. Talley of the Hercules Company, Mr. Watson of Swift and Co., Mr. Thompson of the Lorned Company and Mr. Tarde of the California Chemical Co., had arrived and were giving out information as it was requested.

The meeting itself before the Committee did not take place until 4:30 Wednesday afternoon. By common consent I presented the situation relating to the kelp industry first. By rules laid down for the Committee I was not allowed to talk about the bill except as it related to revenue, but I managed to work in a good deal concerning the habits of kelp and factors which were of necessity finally involved in the question. After I had finished the preliminary presentation Doctor Turrentine spoke particularly on the Federal attitude on the question. He was followed by representatives of the various kelp companies, who answered questions that were asked them. About this time Mr. Posley, who was not a member of the Committee, got busy and stated that he was not ready yet to present his information and asked that the Committee extend the time to a later date. This did not seem fair to those of us who had come a long

distance in order to present material, while Mr. Posley had known of the meeting longer than any of the rest of us and had had ample opportunity to prepare. However, legislative courtesy demanded that the matter be laid over, so the hearing was continued to Monday, April 2, at 4:30. Since this would not permit me to return to San Diego and come back to Sacramento again without great additional expense over the requirements of upkeep in and about Sacramento, I remained in the North.

On Thursday morning Mr. Westerfelt of the Fish and Game Commission and myself saw Mr. Neylan, Chairman of the State Board of Control, and after we had conferred with him for a time Mr. Talley and Mr. Watson came in. It was finally agreed that his office should send an accountant to the Hercules Powder Company's plant in San Diego to check up the figures presented concerning tonnage, etc., which Mr. Posley seemed to think there was a disagreement between Mr. Talley's data and mine. After this conference Mr. Talley and Mr. Watson telegraphed their companies in the East for permission for the account to go over their western books. That afternoon Senator Luce and I saw Mr. Neylan again, and from him we received his absolute assurance that all data obtained by the accountant would be held as confidential matter in his office. That afternoon Senator Luce and I saw Mr. Talley, told him the name of the accountant who was to go, and gave him Mr. Neylan's assurance of good faith, and also Mr. Neylan's further assurance that if the facts proved to be as we had represented them he would appear in person before the next meeting of the Committee on Revenue and Taxation and advise the Committee not to tax a new industry out of existence.

On Friday I took occasion to get better acquainted with several of the committeemen, and explained to them various phases of the question on which each individually seemed to be in doubt. As all legislators and other officers usually get out of the city on Friday evening, I ran down to Berkeley on Saturday and Sunday, returning Sunday evening to Sacramento.

On Monday I continued the usual work, and in the afternoon we again appeared for the hearing. At this time Mr. Neylan reported concerning the telegram received from his accountant. The figures sent verified the statements made by Mr. Talley and myself. Mr. Posley

then tried to present an amendment bill. In this he did not propose to increase the amount of the tax, but tried to place the control of the beds, etc., in the hands of the Scripps Institution, in order that he might vent his grouch against the Fish and Game Commission. I was then called upon to state the position of the Scripps Institution in the matter, and we discussed for some time the inadvisability--indeed the impossibility--of the Scripps Institution acting as a police power. It was brought out particularly that the Scripps Institution is a research station only. After considerable more discussion between various members of the Committee, Mr. Posley and myself, an amendment was finally offered, giving one cent of the one-and-one-half cent tax to the Fish and Game Commission and one-half cent to the Scripps Institution for research work. With this condition prevailing the Committee went into executive session, and later reported on the bill, recommending "do pass", with the above mentioned amendment added. Since the Scripps Institution is coöperating with the Fish and Game Commission I anticipate no difficulty from that source. The matter as it is now passed to the Assembly was not as easily settled as it may possibly appear in this report. Every man who was up there worked in every possible way to bring pressure to bear upon members of the Assembly to save the industry, and more work was done outside of the hearings than was done in the committee room. However, I am more than satisfied that the attendance of each and every man was fully justified, and that the Assembly and also the Senate now is much better informed on the kelp situation than it is upon many matters of legislation.

I do not anticipate that there will be any further trouble in getting the bill through both Assembly and Senate. Senator Thompson of Santa Barbara County will offer an amendment closing the kelp bed off Santa Barbara and Mirimar. This will be passed as a special clause, and will allow Senator Thompson to keep faith with his constituents, though it will not interfere with the working of the bill nor with the harvesting of the kelp beds now being worked. As I understand it, this clause will in reality be unconstitutional, but Senator Luce, who will have charge of the bill in the Senate, will see to it that the bill is not rendered void on account of this one clause.

Monday evening I remained in Sacramento to make sure that everything was in good shape and that all understood how the bill was to move along. Everything going well, the bill should be engrossed today and passed by the House tomorrow. Then it will be taken to the Senate, where it is to be referred to the Fish and Game Committee of the Senate. I do not anticipate that it will be held up in committee there any length of time, but should be shoved along rapidly and passed in the regular course of events.

Tuesday I started homeward. I stopped in Berkeley to talk over the situation with Comptroller Merritt, who has charge of University legislation and who will watch the progress of Assembly Bill 73, and see that it does not fall into some of the pitfalls of the legislature. Then, learning from Doctor Turrentine that Doctor Frye was at Stanford I went there and met him Wednesday morning. This was the first opportunity I have had to meet him, and I thought I should not waste it, especially when I wanted to talk over with him some of the general problems connected with kelp. I got some very interesting data concerning some experiments of which I had not previously known. Then I returned to San Francisco and caught the 5:00 P. M. train for Los Angeles, arriving there yesterday morning at 7:45. Thence I came immediately to La Jolla, and thus have finished a trip that was replete with interesting events and with discoveries of astounding conditions in the State Legislature.

So far as the bill is concerned, Doctor Turrentine and I are both of the opinion that it is now in good shape. As soon as I can catch up with work a little I shall send copies of my card file showing the condition of the companies at the present time.

Very truly yours,

Collaborator.

WCC:FT

Form 1207

CLASS OF SERVICE DESIRED	
Fast Day Message	
Day Letter	
Night Message	
Night Letter	

Patrons should mark an X opposite the class of service desired; OTHERWISE THE TELEGRAM WILL BE TRANSMITTED AS A FAST DAY MESSAGE.

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT

Receiver's No.
Check
Time Filed

Send the following telegram, subject to the terms on back hereof, which are hereby agreed to

SD. 4/19/17 191

To Sen. Herbert F. Slater, Sacramento, Calif.

At request of Mr. Westerfield we are wiring you regarding Assembly Bill #13. This bill was drawn up after conferences between Fish & Game Commission Rep's manufacturers representatives of Federal Government & Scripps Institute with understanding on our part that supervision of beds should be in Fish & Game Commission & research work carried on by Scripps Institute. The division of funds from tax to be apportioned as conditions warrant. It being also understood that manufacturers should assist both State departments in their work. San Diego & Los Angeles County manufacturers in conference

SENDER'S ADDRESS FOR ANSWER

SENDER'S TELEPHONE NUMBER

L. H. Thompson Chairman

ALL TELEGRAMS TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS:

To guard against mistakes or delays, the sender of a telegram should order it REPEATED, that is, telegraphed back to the originating office for comparison. For this, one-half the unrepeated telegram rate is charged in addition. Unless otherwise indicated on its face, THIS IS AN UNREPEATED TELEGRAM AND PAID FOR AS SUCH, in consideration whereof it is agreed between the sender of the telegram and this Company as follows:

1. The Company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery, of any UNREPEATED telegram, beyond the amount received for sending the same; nor for mistakes or delays in the transmission or delivery, or for non-delivery, of any REPEATED telegram, beyond fifty times the sum received for sending the same, *unless specially valued;* nor in any case for delays arising from unavoidable interruption in the working of its lines; *nor for errors in cipher or obscure telegrams.*

2. In any event the Company shall not be liable for damages for any mistakes or delays in the transmission or delivery, or for the non-delivery, of this telegram, whether caused by the negligence of its servants or otherwise, beyond the sum of FIFTY DOLLARS, at which amount this telegram is hereby valued, unless a greater value is stated in writing hereon at the time the telegram is offered to the Company for transmission, and an additional sum paid or agreed to be paid based on such value equal to one-tenth of one per cent. thereof.

3. The Company is hereby made the agent of the sender, without liability, to forward this telegram over the lines of any other Company when necessary to reach its destination.

4. Telegrams will be delivered free within one-half mile of the Company's office in towns of 5,000 population or less, and within one mile of such office in other cities or towns. Beyond these limits the Company does not undertake to make delivery, but will, without liability, at the sender's request, as his agent and at his expense, endeavor to contract for him for such delivery at a reasonable price.

5. No responsibility attaches to this Company concerning telegrams until the same are accepted at one of its transmitting offices; and if a telegram is sent to such office by one of the Company's messengers, he acts for that purpose as the agent of the sender.

6. The Company will not be liable for damages or statutory penalties in any case where the claim is not presented in writing within sixty days after the telegram is filed with the Company for transmission.

7. *Special terms governing the transmission of messages under the classes of messages enumerated below shall apply to messages in each of such respective classes in addition to all the foregoing terms.*

8. *No employee of the Company is authorized to vary the foregoing.*

THE WESTERN UNION TELEGRAPH COMPANY
INCORPORATED
NEWCOMB CARLTON, PRESIDENT

CLASSES OF SERVICE

FAST DAY MESSAGES

A full-rate expedited service.

NIGHT MESSAGES

Accepted up to 2.00 A.M. at reduced rates to be sent during the night and delivered not earlier than the morning of the ensuing business day.

DAY LETTERS

A deferred day service at rates lower than the standard day message rates as follows: One and one-half times the standard Night Letter rate for the transmission of 50 words or less and one-fifth of the initial rate for each additional 10 words or less.

SPECIAL TERMS APPLYING TO DAY LETTERS:

In further consideration of the reduced rate for this special "Day Letter" service, the following special terms in addition to those enumerated above are hereby agreed to:

A. Day Letters may be forwarded by the Telegraph Company as a deferred service and the transmission and delivery of such Day Letters is, in all respects, subordinate to the priority of transmission and delivery of regular telegrams.

B. Day Letters shall be written in plain English. Code language is not permissible.

C. This Day Letter may be delivered by the Telegraph Company by telephoning the same to the addressee, and such delivery shall be a complete discharge of the obligation of the Telegraph Company to deliver.

D. This Day Letter is received subject to the express understanding and agreement that the Company does not undertake that a Day Letter shall be delivered on the day of its date absolutely and at all events; but that the Company's obligation in this respect is subject to the condition that there shall remain sufficient time for the transmission and delivery of such Day Letter on the day of its date during regular office hours, subject to the priority of the transmission of regular telegrams under the conditions named above.

No employee of the Company is authorized to vary the foregoing.

NIGHT LETTERS

Accepted up to 2.00 A.M. for delivery on the morning of the ensuing business day, at rates still lower than standard night message rates, as follows: The standard day rate for 10 words shall be charged for the transmission of 50 words or less, and one-fifth of such standard day rate for 10 words shall be charged for each additional 10 words or less.

SPECIAL TERMS APPLYING TO NIGHT LETTERS:

In further consideration of the reduced rate for this special "Night Letter" service, the following special terms in addition to those enumerated above are hereby agreed to:

A. Night Letters may at the option of the Telegraph Company be mailed at destination to the addressees, and the Company shall be deemed to have discharged its obligation in such cases with respect to delivery by mailing such Night Letters at destination, postage prepaid.

B. Night Letters shall be written in plain English. Code language is not permissible.

No employee of the Company is authorized to vary the foregoing.

ADDRESS ALL COMMUNICATIONS TO
"CHIEF, BUREAU OF SOILS."

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

CAW*MF

April 18, 1917.

Mr. W. C. Crandall,
The Scripps Institution
for Biological Research,
LaJolla, California.

Dear Sir:-

Your March-April travel account for $84.65 is returned herewith in order that you may indicate hours of departure from, and arrival at, the several points visited; the necessity for or desirability of stopping enroute; and whether or not meals were paid for when obtained or at the end of a certain period. Subvouchers are required for meals when they are paid for at certain intervals and the period is in excess of three days.

Voucher number 3 is incomplete in that the date of payment and the capacity in which Mr. Gilcrease receipted for funds for the Elks Club are not shown. It is noted that voucher No. 1 covers lodgings at Sacramento from March 26 to 29th; that voucher No. 2 covers lodgings at Berkeley from March 30 to 31st; and that voucher No. 3 at Sacramento April 1st and 2nd; but transportation to and from Berkeley is neither reported nor accounted for. Kindly further explain the account in this respect, acccunt for lodging the night of April 3rd, make changes indicated, and return the account at your early convenience.

Very truly yours,

A. G. Rue

Chief Clerk.

1 84.65
15

CAV/MF

April 18, 1917.

Mr. W. C. Crandall,
The Scripps Institution
for Biological Research,
La Jolla, California.

Dear Sir:-

Your March-April travel account for $84.65 is returned herewith in order that you may indicate hours of departure from, and arrival at, the several points visited; the necessity for or desirability of stopping enroute; and whether or not meals were paid for when obtained or at the end of a certain period. Subvouchers are required for meals when they are paid for at certain intervals and the period is in excess of three days.

Voucher number 3 is incomplete in that the date of payment and the capacity in which Mr. Gilcrease received for funds for the Pike Club are not shown. It is noted that voucher No. 1 covers lodgings at Sacramento from March 25 to 29th; that voucher No. 2 covers lodgings at Berkeley from March 30 to 31st; and that voucher No. 3 at Sacramento April 1st and 2nd; but transportation to and from Berkeley is neither reported nor accounted for. Kindly further explain the account in this respect, account for lodging the night of April 3rd, make changes indicated, and return the account at your early convenience.

Very truly yours,

Chief Clerk.

Condition of Beds

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

INVESTIGATION OF FERTILIZER RESOURCES.

La Jolla,Cal 4/28/17

Chief,Bureau of Soils,

Washington,D.C.

Dear Sir:

Last Tuesday night at 5 P.M., I went as the guest of Swift and Company on a trip on the Madaleine to Clemente Island and thence back and down the coast from San Juan Point to San Diego. We arrived at San Clemente at 6 A.M. and then went over the beds that are in that region. We found that there were many young plants in sight and that the beds were coming out in good shape. There were few old plants in sight but the new ones were already on the surface and beginning to spread out on the surface. These beds were cut in March by the Hercules Powder Co. as well as much depleted by frequent storms this last winter. Thursday morning we were at San Juan Point and there found ourselves caught by a stiff southeaster. However we followed the beds down the coast which had all been cut the later part of February. These beds are now coming back in good shape also. In fact these beds seem to be improving all the time both getting thicker than they formerly were and larger beds. The outlook for the summer cut seems to be excellent. On account of port closing rules and the nasty sea that was running we hurried the trip but from the samples of beds seen, I feel that conditions are very favorable locally.

I have not seen the beds about San Pedro for a long time and I hope to be able to go up there soon. I understand that they are still keeping the beds well cut and are therefore still in the air about their cut. They will not give time for the beds to get a good growth between cuts.

The last two storms have been hard on equipment about Long Beach

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

#2.

INVESTIGATION OF FERTILIZER RESOURCES.

I hear that several barges were lost and harvestors damaged. I have only hearsya at present but will get the facts.

The kelp bill #73 passes the legislature in ood shape and is now up to the Governor for signature. There is no doubt now as to its final passing into law.

I note by the papers that there have beentwo attempts at Long Beach to burn kelp plants. Locally there have been two reported scares of attempted distruction to the Hercules Powder Co. plant. However they are now protected both by their own guards as well as by U.S. troops.

Sincerely yours

Collaborator.

jwt-r

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS.
INVESTIGATION OF FERTILIZER RESOURCES.
EXPERIMENTAL PLANT FOR THE EXTRACTION OF POTASH FROM KELP.
SUMMERLAND, CALIFORNIA.

May 3d, 1917.

Prof. W. C. Crandall,
Scripps Institute for Biological Research,
La Jolla, Cal.

Dear Crandall:-

Will you give me the latest information with reference to the so-called "Kelp Bill", and also the bill proposing to appropriate $50,000 for the work of your institution on kelp and fish.

Please give me the initials of Mr. Bent of the Hercules Powder Company.

There are some developments here of interest, mostly of a favorable character, but I will not take up your time to relate them. Make us a visit at your earliest opportunity.

Yours very truly,

J. W. Turrentine

In Charge.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

INVESTIGATION OF FERTILIZER RESOURCES.

J.W.Turrentine, May5th 1917.

Santa Barbara, Cal.

My Dear Turrentine:

The Kelp Bill passed as it was amended when we left Sacramento i.e. 1c to Fish and Game Commission. 1/2c to Scripps Institution. It is now up to the Governor for bis signature.

The $50 000 for Scripps Institution Special was lost in the shuffle. We are to get some part of the Defence Council Appropriation amounting to about $10 000 for the next year. I am not fully advised as yet as to just the manner in which this will be handled.

R.J.Bent is the full title of the Hercules manager.

I am expecting to be called to San Francisco at any time and am looking forward to a visit with you at that time. If I do not go soon, I shall take a run up in the machine to see how you are. I shall be in Los Angeles on the 10th. There is to be a State Defence meeting at that time.

Yours truly

W.C.Crandall

jwt-r

May 8th, 1917.

Mr. N. L. Gardner,
Dept. of Botany, Univ. of California,
Berkeley, Cal.

Dear Sir:-

I must apologize for the long time it has taken me to reach your esteemed inquiry of January 11th, regarding work to be done in collaboration on the general problem of the utilization of marine algae relating to fisheries. I appreciate your inquiry and have hoped that I would be able to point out some way in which your kind offer of assistance could be taken advantage of. We are so busily engaged here with detailed construction, that we are not in a position at present to map out work of the nature suggested by you. This is something however, which we shall hope to take up in the future. In the meantime I am taking the liberty of referring your letter to Prof. W. C. Crandall of your Marine Institution at La Jolla, who is interested in the biological phases of the kelp question as well as the commercial, and I believe has funds for research work of the character you mention.

I trust the problems in which you are interested can be investigated, for I regard it as a very fruitful field indeed, not only from the point of view of commerce, but also from that of pure science.

Very truly yours,

In Charge.

jwt-r

May 8th, 1917.

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Dept. of Botany, Univ. of California,
Berkeley, Cal.

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Very truly yours,

In Charge.

Harvest Statistics

May 19th 1917.

Chief, Bureau of Soils,

Washington, D.C.

Dea r Sir:

Last Monday I went to Long Beach to visit the kelp companies and found the follwing added data to last report:

May 1 Diamond Match Co. harvested 10 500 tons. Built one new harvestor $10 000 Have harvested in follwing beds: Pt Fermin, Redondo, and Pt. Dume. Had one harvestor overturn during a storm but were able to salvage it without loss except in two weeks working time.

May 1 National Kelp Potash Co., Burned down about May 1st. Due to installing gas and having a tee not plugged. Insurance Co. is now bringing suit against Gas Co. to recover. Probably this company will not resume business.

Lorned Manf.Co. Built two schooner harvestors self propelled and sraped one of the old harvestors and sold the other one to the Bureau. Harvested 1891 tons since last rep tt. Harvested in t.Fermin and Redondo beds.

Above company has installed the fol owing at Summerland: 4 driers, 1 incinerator, Will use about 14 men in plant. Will not run for at least 60 days.

Pacific Products Co., Built one self propelles harvestor, harvested 2945 tone since last report. Cut at t.Fermin and Pt. Dume. Lost entire marine equipment at sea in storm and then recov ed it after the storm had blown itself out.

#2. Chief, Soils.

Sea Products Co., Equipment is now 2 tugs, 1 self propelled barge and harvestor, Have cut 5973 to May 13th. Lost 1 barge in last storm making three barges last during the last winter. Cit Pt.Fermin, Redondo, and Pt.Lume. Their $6 unit contract runs out on July 1st. They have another contract at $4.50 for 100 000 tons of ash.

United State Potash and Fertilizer Co., I think is by the board as I note by the paper that MrOppenheimer has recently found a method of extracting potash from cactus so will probavly bleed the public in that manner for the present. He is associated with a man by the name of Hurst. This company has asked for an extension of their franchise frvm Santa Barbara Co and the same has been granted but it will go no further, I think.

California Chemical Co. is installing at Summerland. Two driers, 1 incinerator, 1 self propelled harvestor-barge. Factory is crowded and ill arranged. May operate in sixty days.

Will report on San Diego companies shortly.

Sincerely yours,

HER. 355

ALL QUOTATIONS SUBJECT TO CHANGE WITHOUT NOTICE

CABLE ADDRESS "HERPOCO"

HERCULES POWDER CO.

CHICAGO, ILL.
DENVER, COL.
HAZLETON, PA.
PITTSBURG, KAN.
JOPLIN, MO.
NEW YORK, N.Y.
PITTSBURGH, PA.
SALT LAKE CITY, UTAH
SAN FRANCISCO, CAL.
ST. LOUIS, MO.
WILMINGTON, DEL.
MEMPHIS, TENN.

MANUFACTURERS OF EXPLOSIVES

DYNAMITE
GELATIN DYNAMITE
BLASTING GELATIN
PERMISSIBLE POWDERS
BLASTING SUPPLIES
BLASTING POWDER
BLACK SPORTING POWDERS
SMOKELESS SHOTGUN POWDERS
SMOKELESS RIFLE POWDERS

San Diego, Cal.,
May 28th, 1917.

Mr. W. C. Crandall,
The Scripps Institution
for Biological Research,
La Jolla, California.

My dear Dr. Crandall:

We are in receipt of your letter of May 25th, regarding proposed rules and regulations for the control of kelp beds.

We called up Captain Watson this morning and we thought it would be a very good idea if we could get together on this informally and talk the matter over.

Captain Watson, Captain Morris and I are contemplating a trip to San Clemente in the near future, with the idea of seeing in what condition the new kelp is. We probably also will visit San Nicholas and Santa Barbara at the same time. We would like very much if possible to have you with us on this trip. We would probably take the Bahada and a good cook and should have a pretty comfortable time. We can take advantage of this trip to talk over the question at length.

Our personal opinion regarding kelp regulation is that, for the time being, we should not attempt anything too rigid, this chiefly on account of our lack of knowledge of the growth of kelp and the effect of the season of the year on the growth.

Another thing we should consider is whether or not a closed bed will mean exclusion of everybody, including hand pickers as well as the big harvesters. This of course would work a hardship on the hand pickers who are entirely dependent on beds close in.

Will you kindly advise if you would like to take this trip with us and what time would be most convenient for you. The trip above outlined will probably take about three days and three nights.

Sincerely yours,

L. M. Bent

LNB-MFD

SAFETY FIRST—USE PERMISSIBLE EXPLOSIVES THAT DO NOT REQUIRE THAWING

THE DIAMOND MATCH CO.
EAST WILMINGTON. CALIF.

May 28, 1917.

Capt. W. C. Crandall,
Scripps Biological Institution,
La Jolla, California.

Dear Sir:

Referring to your letter of May 25th with regard to "rules and regulations for the control of kelp beds."

From our experience of the past year we would make the following suggestions: first, that for the time being the Pt. Dume beds from Port Los Angeles Pier to Pt. Mugu be left open indefinitely and that the Pt. Firmin beds from the San Pedro breakwater to Pt. Vincent and the Redondo beds from Pt. Vincent to Redondo Beach be closed and opened alternately two months each. I would continue these regulations for perhaps a year from this date and would then check up the total amount of kelp taken from the Redondo and Firmin beds with the amounts cut during same months for 1916 and 1917 when we started out with these two beds full grown. We would thus get a check or a comparison as to the relative amounts of kelp these beds would produce when starting full grown and mature and then cutting continuously; and keeping them closed for two months and then open for two months. For the past several months we have allowed the Firmin and Redondo beds to rest two months each before cutting and then when one of these beds was opened, say Pt. Firmin for instance, we would cut with pretty good cutting three to four weeks and then we would finish up the other month by cutting at Pt. Dume so that Redondo would have a rest of two months and then we would open Redondo and close Firmin, getting about one months good cutting

THE DIAMOND MATCH CO.
EAST WILMINGTON. CALIF.

WCC #2 5/28/17.

at Redondo then going to Pt. Dume for a couple of weeks then possibly finishing up the month at Redondo. It might seem that these two beds, Firmin and Redondo, should be allowed to rest three months before cutting. However if this is attempted it will mean extreme hardships for all companies in this vicinity for we would practically have to shut down our plants for the third month.

We have found that the beds grow up fairly well in two months. If a bed is left to grow another month of course there is always the possibility of storms pulling up large amounts of kelp and blowing it on shore and of course the thicker the bed at the time of the storm the greater would be the amount of kelp wasted this way.

I do not know of any regulations that would give better results than these for the kelp companies in this vicinity. Of course it is to be hoped that the Hercules harvesters will not cut in the Firmin, Redondo and Pt. Dume beds and undoubtedly they will give us the same considerations in this respect that they have practised during the past year.

Yours very truly,

THE DIAMOND MATCH COMPANY,

CAP:P BY A. P. Piper

J

THE LORNED MANUFACTURING COMPANY

INCORPORATED

G. W. SIMMONS, President
L. H. THOMPSON, Vice-President
A. H. BRYANT, Vice-President
L. S. HASLAM, Treasurer
EDW. J. PORTEOUS, Asst. Treasurer
GEO. B. HARRIS, Secretary

MAKERS OF

POTASH AND FERTILIZERS

1724 WHITEHALL BUILDING
NEW YORK CITY
910 SPRUCE STREET
ST. LOUIS
FACTORY AT
LONG BEACH, CAL.
FACTORY AT
SUMMERLAND, CAL.

Long Beach, Calif.,
May 31, 1917.

Capt. W. C. Crandall,
Scripps Institution,
La Jolla, California.

Dear Capt. Crandall:

I have been so busy that I haven't had an opportunity acknowledge sooner your letter of the 25th instant.

It is impossible for me at this time to work out a digest of all I think should go into the Rules and Regulations under the new State Kelp Law. I think your method of getting some rough draft of Rules before the meeting, however, is the proper thing, and I will try to get time to go over this subject properly and make notations and send them to you.

I hope you will be able to set a meeting of all of the manufacturers for the discussion of this very important matter, and have us all notified several days in advance, as you know I am pretty well occupied between our two factories now, and it would be a great convenience to me if I could make my plans well ahead of time. I will let you hear from me more satisfactorily on this subject at the earliest possible time.

Very truly yours,

L. H. Thompson

LHT*ELB

jwt-r

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS.
INVESTIGATION OF FERTILIZER RESOURCES.
EXPERIMENTAL PLANT FOR THE EXTRACTION OF POTASH FROM KELP.
SUMMERLAND, CALIFORNIA.

June 2nd, 1917.

Prof. W. C. Crandall,
Scripps Institute for Biological Research,
La Jolla, Cal.

Dear Crandall:-

I am in receipt of your favor of May 25th relative to Rules and Regulations for the Control of Kelp Beds. This is a matter to which I wish to give some study, therefore I shall wait until I have had the opportunity to do that before complying with your request.

Enclosed herewith is a letter which I am taking the liberty of referring to you for attention.

Yours very truly,

J W Turrentine

Enclosures.

In Charge.

THE DIAMOND MATCH CO.
EAST WILMINGTON, CALIF.

June 6, 1917.

Mr. W. C. Crandall,
Scripps Biological Institute,
La Jolla, Calif.

Dear Sir:

I am trying to obtain an accurate record of the earliest phases of the kelp industry in this section and would like to find out if possible the date when Mr. Richard Lowman first began operating a harvester in the Point Firmin beds and when construction on this harvester began.

On page 233 of "Fertilizer Resources of the United States" (Document 190) it says"a mechanical cutter is employed at San Deigo, Calif., with revolving blades". I would like to find out if possible just when and by whom this cutter was operated and whether or not it was a self-propelled harvester.

Any information you might be able to give me regarding these two points or any other information you might be able to give regarding the earlier kelp industry in this section, I would be very grateful to receive.

Yours very truly,
THE DIAMOND MATCH COMPANY,
BY Chas. A. Pierson

CAP:P

HOWARD W. JUDSON
PRESIDENT

ROLAND G. SWAFFIELD
VICE-PRESIDENT

W. E. PRIVETT
SECRETARY-TREASURER

SEA PRODUCTS COMPANY

(INCORPORATED)
MANUFACTURERS
CHANNEL NO. 2, WEST SEVENTH STREET
LONG BEACH, CAL.

DICTATED BY HWJ TO G.

June 6, 1917.

The Scripps Institution For Biologi cal Research,
La Jolla, Cal.

Attention Mr. W. C. Crandall.

Dear Sir:

Replying to yours of the 25th ult., beg to advise that we have no other suggestions to offer than have been talked over from time to time at the various kelp association meetings, although we will be very much pleased to meet with you and the other kelp people to go over your contemplated rules and regulations, as soon as you have them formulated, and might at that time have several suggestions to offer, and will highly appreciate the opportunity of so doing.

We are very glad that Bill #73 has been endorsed and realize the utmost importance of proper regulation of kelp harvesting, as the supply seems to be extremely limited, and we are now anticipating having to go as far as Santa Barbara in order to get enough kelp to keep our plants in operation, which they have not been to capacity for some time.

Hoping to have the opportunity of meeting with the other manufacturers together with yourself in the near future, we remain,

Yours very truly,

SEA PRODUCTS COMPANY,

By Howard W. Judson
President.

FACTORIES
LONG BEACH
SAN DIEGO

SOUTHERN REDUCTION COMPANY

MARSH-STRONG BUILDING

LOS ANGELES

June
seventh
1917.

Mr. W. C. Crandall,

La Jolla, California.

My dear Sir:

Replying to your invitation for suggestions as to rules and regulations for the control of kelp beds, beg to explain that the Southern Reduction Company have been operating a kelp plant at Roseville, under lease. The lease having expired, and the plant having discontinued operations, this company will not, for the present at least, engage in the manufacture of Potash from Kelp.

Yours very truly,

SOUTHERN REDUCTION COMPANY,

Per C D Crandall

President.

CDC-D

PLANT—LONG BEACH, CAL.

OFFICE: MAIN 4941
HOME A 3686

NATIONAL KELP POTASH CO.
MANUFACTURERS OF
POTASH AND POTASH FERTILIZER
MARSH-STRONG BUILDING
LOS ANGELES

June
seventh
1917.

Mr. W. C. Crandall,

La Jolla, California.

My dear Sir:

Replying to your invitation for suggestions as to rules and regulations for the control of Kelp Beds, beg to explain that the National Kelp Potash Company lost its plant by fire, on April 25th. They are, consequently, out of business, and are too modest to make suggestions for the guidance of others in which they are not mutually interested.

Yours truly,

NATIONAL KELP POTASH COMPANY,

Per C. D. Jarvis
Treasurer.

CDC-D

HOME F-3735

MAIN 3704

STERN REALTY COMPANY, INC.
JACOB STERN, President
REAL ESTATE AND INVESTMENTS
WALNUT, ORANGE, LEMON AND AVOCADO GROVES AND UNIMPROVED LAND
ORANGE COUNTY PROPERTY A SPECIALTY
SEE OUR RICHFIELD ACREAGE AND EAST WHITTIER SUBDIVISION
SUITE, 601-602-603 HAAS BUILDING

LOS ANGELES, CAL. May 25th, 1917.

Government Kelp Treating Plant,
Summerland, Calif.

Dear Sirs:-

In going thru one of the curio stores here in the City I came across some articles made out of kelp, among them some nut bowls made out of the big kelp bulbs. While at the beach recently we found a great number of these bulbs, and decided they would be splendid souvenirs to send to the "folks back home". However, so far I have been unable to find out how the kelp is dried or cured so that it could be used for that purpose. I have tried all sources,- the library, Chamber of Commerce, etc. but no one seems to know. As a last resort I phoned the "Times" Information Bureau, and they referred me to you, saying I could possibly get some information from you, or that you might be able to refer me to someone who could give me the desired information.

Any information you may be able to give me will be greatly appreciated. Thanking you in advance, I am

Yours very truly,

Adela M. Viles

3214 Royal Street,
Los Angeles, Calif.

Copy

June 2, 1917.

Miss Adela M. Viles,
3214 Royal Street,
Los Angeles, Cal.

Dear Madam:-

Replying to your inquiry of May 25th regarding growing kelp, permit me to say that I have referred your letter to Prof. W. C. Crandall of the Scripps Marine Biological Station at La Jolla, Cal. He will probably be able to give you the information you desire.

Very truly yours,

In Charge.

Copy

June 2, 1917.

Miss Adela M. Vilas,
3214 Royal Street,
Los Angeles, Cal.

Dear Madam:-

Replying to your inquiry of May 25th regarding growing kelp, permit me to say that I have referred your letter to Prof. W. C. Crandall of the Scripps Marine Biological Station at La Jolla, Cal. He will probably be able to give you the information you desire.

Very truly yours,

In Charge.

June 8th 1917

Miss Adela M.Viles,

Los Angeles,Cal.

My dear Miss Viles:

Your letter to Government Kelp Treating Plant at Summerland has been refered to this office.

We have never been successful at drying the big kelp bulbs. We simpy hang them up on a line like a clothes line where the air can circulate freely and some of them dry in good shape and some rot. Why one does rot and another does not, I don't know.

In addition to the above, it might be well to wash first in a 10 percent solution of formalin before hanging up to dry.

I am sorry that we are unable to give you further data on this.

Yours truly

W C Crandall

Business Manager.

June 8th 1917.

Dr.J.W.Turrentine,

Summerland,Cal.

Dear Turrentine:

Don't delay too long in your thinking as I understand that the bill becomes opperative after the 27th of this month and probably it will be necessary to have a working basis by that time, not final but at least temporarily workable.

I am leaving for St.Nicolas tomorrow, back Monday. Was out there last week for two days.

How is the plant and how are you?

Sincerely yours

R C Crandall

COMMISSIONERS
F. M. NEWBERT
M. J. CONNELL
E. L. BOSQUI

EXECUTIVE OFFICER
CARL WESTERFELD

FISH AND GAME COMMISSION
OF CALIFORNIA

SAN FRANCISCO June 11, 1917.

W. C. Crandall,
La Jolla, Cal.

Dear Mr. Crandall:-

Mr. John S. Burd has asked us for the latest list of kelp companies operating in southern California. He asks for their official titles.

We have written him telling him that we are referring the question to you, and that you will write him.

Yours very truly,

N. B. Scofield

June 15th 1917.

Mr.H.G.Morse,Asst Treas.,

Boston,Mass.

Dear Sir:

Mr.Fred.W.Brown has asked me to refer you to firms having gums obtained from wax. I am refering you to Mr.Bent, Manager of the Hercules Powder Co. located at Chula Vista, Cal. He will write you concerning their output.

Sincerely yours

W.C.Crandall

Collaborator.

June 13th 1917.

Mr.L.N.Bent,

Hercules Powder Co.,

Chula Vista,Cal.

My dear Mr.Bent:

Enclosed find letter refered to in my telephone message. I have written that I have refered the same to you. Trusting that this may be of assistance to both you and the firm desiring the information,I am

Sincerely yours,

W.G.Eberhardt

June13th 1917

Dr.John S.Burd,

Berkeley,Cal.

Dear Sir:

Below is the list of kelp companies that are operating at this date or are in the process of completing thier plants.

Hercules Powder Co.	Chula Vista	
Swift and Co.	San Diego,Cal	
Lorned Manufacturing Co.	LongBeach	
Sea Products Co.	"	
Pacific Products Co.	"	
Oceanic Engineering Co.	"	Adjunct of Sea Products.
Diamond Match Co.	Wilmington	
Bureau of Soils Kelp Experimental Station	Summerland	Building.
California Chemical Co.	"	"
Lorned Manufacturing Co.	"	"

Within the last month two companies have gone out of business namely the Southern Reduction Co. which was working leased property which has been sold to Mexican investors who are moving their plant from San Diego to a point below Ensenada.

Also the National Kelp Potash Co of Long Beach was burnt out about May 30th and will not rebuild or re-enter the business.

There are in addition several handpickers at work between San Diego and Long Beach but they are various and unattached.

Yours truly

W. C. [illegible]

Business Manager.

Condition of Beds
Legislation

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

INVESTIGATION OF FERTILIZER RESOURCES.

La Jolla, Cal.

June 14th 1917

Chief, Bureau of Soils:

Washington, D.C.

Dear Sirs

Since ~~May~~ Apr. 28th, the following events have occured in the kelp work:

Last of April, fire at the National Kelp Potash Co. destroyed the plant and as a result they are out of business.

1st. of May the lease of the So. Reduction Co on the Roseville plant expired and the plant is now being dismounted and is being sent to Mexico where it is to be set up near Ensenada. It is to be used by Gov. Cantu as a powder works according to report. From the condition that the plant was in, there is little that he will get out of the plant when he gets it the e as the whole plant was pretty well burnt out and is worth practically nothing.

On May 11th, I stopped off on my way south from a trip to San Francisco and visited the plant at Summerland and talked over situations with Dr. Turrentine. I also went through the plants of the Lorned Manufacturing Co. and the Califoria Chemical Co. These plants are well located off the kelp beds but I rather anticipate that they will have some little difficulties with the elite of Santa Barbara. For arrangement and possibilities, the plants ought to surpass any that are running at the present time except the Cal. Che, Co. Plant which is a joke i its arrangement. A fat man could not keep a job if he got one there onaccount of the closeness of the driers to each other.

On last Saturday at 11 A.M. I went with Mr. Bont of the Hercules

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

Powder Co., Mr.Watson of Swift Co. and Mr.Higgins Hercules C . on the Tug Bahada to San Clemete Island where we looked at the kelp on the windw ward side of the island. This kelp is coming along in good shape and will be ready for cutting in a couple of weeks. We then went over to San Nicolas Is. where there was an excellent stand of kelp but both companies were dubious about being able to handle the kelp on account of the rough seas and the fact that if they had any t ouble that they could not esaape going ashore. For the present then I doubt whether any of the local companies will utilize these the St.Nicolas beds. The sea was so rough that we were unable to steam at more than 3 or 4 knots er hour going around the island. The sea at that was far smoother than I had found it the previ us week when I was in the same location on some fish investigation work. There is a chance that this territory may be used in August and September and thus give the coastal beds a rest.

After our visit to St.Nicolas, we went over to Santa Barbara Is. and found one of the beds there com ng along in good shape while the other bed was not in such good shape.

We then left for Ventura on the mainland and coasted up as far as Naples ab ve Santa Barbara. The beds in this part were in exce llent shape and there is no doubt that there is room for th ose now starting and several more in that part of the beds. Knowing the present need of potash, I was much disturbed that we should be loosing so much kelp at this time. There is good room for developement in that district now. There s no reas n why we should not be turning out a lot more potash than we are t present r than we are contemplating at this time.

After visiting this past of the coast, we sailed for San Juan

Point. Here we followed down the beds that have been recently cut and t they are coming along in excellent shape. At present the Pt.Loma and La Jolla beds are being cut and they will used for about ten days yet. All the local companies are working in good shape and are getting the k kelp that they need. This is true however with the local companies an d that is that they cut a bed an then go off and leave the bed alone for about two months. This really gives over three months between the cut- ting of any particular part of a bed. In this manner the beds seem to thrive.

After visiting the local beds, we passed the guard ship and com- pleted a three days trip.

Last week I was on a trip around Point Dume an visited those beds in con ection with other work as we l as the beds about Point Vincente nad Point Fermin. There work there is crude in the extreme and a lot of kelp was being wasted. Also they do not let the beds rest enough. Every outfit was consisted of a harvestor, a barge, and at least two tugs. Usually three of these would be abreast during the cutting.

All companies are still loosin g too much material and we are try- ing to solve this difficulty.

Next week I am invited by Hercules Co. to go with them on a trip down the Mexican Coast for perhaps a 100 miles. I have been anxious to go down for some time and shall try and avail myself of this opportunity.

Last week I made arrangements with the Lorned Co. to permit me to use a lot of excellent material in the growth and harvesting data in a bulletin either by the State Fish and Game Commission or else by

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

INVESTIGATION OF FERTILIZER RESOURCES.

Scripps Instituti n. Mr. Porteous has made some very original and well outlined observations and his w rk should be in such shape as to be available.

The State Fish and Game Commission is putting up to me the matter o of drawing up the "Rules and Regulations" for the kelp industry. In this connection, I have asked the various managers of the various comapanies to send to me their views and then I shall use my own and try and draw up a temporary set for their use.

The Federal Experimental Station will have the same part of the beds set aside by the State as it has now by Santa Barbara Co. No other company will have a definite area alloted to it. Under the State Constitution, this is impossible. However, the gentlemen's agreements that are now in existence will still be in force, I am sure and there will be no trouble on that sco e unless some one tries to grab off too much. I anticipate only one place where this is apt to happen and That can be straightened out without much trouble by the companies themselves.

At present, I feel that we should open and close the coastal beds definitely and leave the islands beds open all the time.

For the handpickers, A small area should be left open all the time near the large beds.

At the present time, each company is thinking somewhat of what it ants for it elf and how it would like the other fellow controlled but t ink there is spirit of fairness abroad that will enable us to get all to a good frame of mind so as to accept the compromises that will be cessary.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

INVESTIGATION OF FERTILIZER RESOURCES.

You no doubt have heard that Mr.Oppenheimer, one of the former chemists of the American Products Co. now says tha the place to get potash is from cactus and that he has a process to get the same. Oppenheimer ought to bo put where he would forget his little schemes and the public saved its money. There is potash is cactus, but the available quantity is limited and the gathering would be prohibitive.

Hercules Powder Co. is putting out a gum that may answer the purpose asked by Mr.Morse of Boston. I have asked the Hercules Manager to send a sample f their product to the Clifton Co.

If more potash is needed absolutely, there is no reason why we should not ge busy and gather twice what we are getting at the present time. Also the active companies can go to it and supply the companies starting so as to hurry the game if necessary. If the government wants action here, we can go to it and give it.

Yours sincerely

M. C. Crandall

Co laborator.

ADDRESS ALL COMMUNICATIONS TO
"CHIEF, BUREAU OF SOILS."

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

CAW*MF

June 14, 1917.

Mr. W. C. Crandall,
Scripps Biological Institute,
La Jolla, California.

Dear Sir:-

Payment of your March-April account for $84.65 has been greatly delayed because of pressure of office work, and it now becomes necessary to again return the account to you with request that you advise whether or not Pullman and hotel accommodations (including meals) for which charges are reported, were shared jointly with another. Pullman ticket No. 5317 as punched indicates that two persons traveled thereon, and if this be true, under regulations and decisions effective at the present time, credit can be allowed for but one-half the charge.

It seems from the account that you spent the night of April 3rd at Stanford instead of the night of the 4th, as is indicated on form 4. We have rewritten your memorandum submitted in reply to letter from this office dated April 18th, omitting certain portions. We desire to attach this memorandum to your account, therefore you are requested to sign same providing the statements contained therein are correct. Kindly make changes indicated above and return the account at your earliest convenience in order that there may be no further delay in payment.

Very truly yours,

C. A. Woolfe

Acting Chief Clerk.

CAW*MT

June 14, 1917.

Mr. W. C. Crandall,
Scripps Biological Institute,
La Jolla, California.

Dear Sir:-

Payment of your March-April account for $84.65 has been greatly delayed because of pressure of office work, and it now becomes necessary to again return the account to you with request that you advise whether or not Pullman and hotel accommodations (including meals) for which charges are reported, were shared jointly with another. Pullman ticket No. 5817 as punched indicates that two persons traveled thereon, and if this be true, under regulations and decisions effective at the present time, credit can be allowed for but one-half the charge.

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Very truly yours,

Chief Clerk.

COPY FOR CAPT. W. C. CRANDALL.

San Diego, Cal.,
June 16th, 1917.

Mr. H. G. Morse,
Assistant Treasurer,
Clifton Mfg. Co.,
65 Brookside Ave.,
Jamaica Plain,
Boston, Massachusetts.

Dear Sir:

Your letter to the Department of Agriculture, regarding the production of gums from kelp, has been referred to us for reply.

We have been doing considerable development work along these lines, and are today sending you two samples representing some of the material which can be obtained from kelp.

Sample No. 1 is Sodium Alginate and is a distinct chemical compound. This material is soluble in water, forming very viscous colloid. The viscosity of this colloid may be increased or diminished by the usual methods employed in the treatment of other colloids. In general, we might say that Sodium Alginate may be used to replace gum arabic for most purposes.

We are sending you two samples of the Sodium Alginate, one bleached and the other unbleached. If desired, this material may be produced in the form of a transparent colorless material, although for most purposes bleaching is unnecessary.

The other sample sent you is Alginic Acid, which is insoluble in water, or in fact in any of the commonly known solvents. It may be used in solution with Sodium Alginate. In this way a strong adhesive may be produced. Alginic Acid forms salts of the ordinary metals and alkaline earths, all with marked characteristics, as regards solubility, color, viscosity, etc.

In addition to the above two compounds, we have produced still another organic acid, which will probably be desirable as an adhesive, but the properties of which we are not yet sufficiently acquainted with to make definite statements as to its application in the industries.

If you would like further information regarding this material, we will be pleased to give you any data we have available, and if you could tell us just how the material is to be used, it is very possible that we could, with our experience, save you some trouble in its application.

Very truly yours,

HERCULES POWDER CO.,

Per

LNB-MFD Manager.

Copy to
Mr. T. W. Bacchus,
Mr. W. C. Crandall.

BACKING CLOTH & SHOE COVERING CLOTH
CLIFTON GEM INSOLE CANVAS.

CLIFTON QUALITY CLOTHING

CLIFTON ENAMEL & GALVANIZED STEEL CONDUITS
INSULATING TAPES & COMPOUNDS.

Clifton Manufacturing Co.

RUBBER GOODS

65 BROOKSIDE AVE., JAMAICA PLAIN,

BOSTON, MASS.

Wm. M. TENNEY,
PRESIDENT & TREASURER.

June 19, 1917.

Mr. W. C. Crandall, Collaborator,
LaJolla. California. (near San Diego)

Dear Sir:

ALL CONTRACTS AND AGREEMENTS ARE CONTINGENT UPON STRIKES, ACCIDENTS AND OTHER OCCURRENCES BEYOND OUR CONTROL. QUOTATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

We have received your letter referring us to Mr. Bent of the Hercules Powder Co., and we wish to express our appreciation of your courtesy in the matter, and trust that our correspondence may be of mutual benefit.

Very truly yours,

H.G.M.
G.C.M.

CLIFTON MANUFACTURING COMPANY

H. G. Morse

Asst. Treasurer.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

INVESTIGATION OF FERTILIZER RESOURCES.

June 20th 1917.

Chief, Bureau of Soios,

Washington D.C. Attention C.A.Wolfe.

Dear Sir:

Regarding the letter of June 14th, I did not have anyone sharing berth upper 9 as indicated on #5317. How this error creeped in, I cannot say but I suspect I may have gotten a returned ticket that was for resale. They may have simply punched it wrong. However, I was unaccompanied in hotels, Pullmans etc. where chearges are reported. (I happen to measure 6[illegible] 1 1/2" in length and need a whole berth and then some to be comfortable.)

Regarding the Apr. 3, I might better have stated that possibly 4/3- 4/4 as that was what I intended. Then the Pullman was 4/4-4/5. The 4/3- 4/4 was my 4/3 night. This would then not conflict with the 4/1- 4/3 Sacramento Hotel Bill. So as to show the entire time, I will send night bills in this manner if occassion should again arise.

Thanking you for trying to straighten this out, I am

Sincerely yours,

Collaborator.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

INVESTIGATION OF FERTILIZER RESOURCES.

June 20th 1917.

Chief, Bureau of Soils,
Washington, D.C.

Dear Sir:

Las t Sunday I left at 2 A.M. for San Diego where I boarded the R.G.Creswell G 5 owned by Hercules Co. at 4 A.M. and in company with their manager, Mr.Bent, and Mr.Watson, Manager of Swift Co., went on a cruise as far south as Todos Santos. From Point of Rocks to Descanso Point there was a good bed of kelp. Of course this is off Mexica n territory. Also there is a good bed of kelp extending up from Ensanda for about 10 miles. About Todos Santos there is a good growth of e- kelp and it is well located for cutting. In all we saw about 50 000 tons of kelp available on the run to the Todos Santos Is. In addition there is a considerable amount off the Coronado Is. about 10 000 tons. The companies are looking to this source for possible supplementary supply near the home port. Conditions against it are the prevailing winds in the summerland time aking the towing difficult. Whe-ther the beds can be gotten or not is an open question i.e. at anything like a reasonable figure.

The papers state that a kelp factory has already been started in Ensenada as per my last letter. The latest that I can find out is that the drum has een shipped and the barges and harvestors taken down from the old Blankenberg plant.

Caught in heavy fog and returned at 10:30 P.M. after being shot at by a patrol boat and sticking on a mud bank for a time. However it as a great day and the kelp is still there.

Sincerely yours W C Crandall

GEORGE H. ENNIS, PRESIDENT PHONE: PACIFIC 287 W. FRANK FISHER, SEC'Y-TREAS.

Pacific Products Company of California

INCORPORATED

MANUFACTURERS OF

KELP ASH, POTASH AND BY-PRODUCTS

GENERAL OFFICES
514-515 EXCHANGE BUILDING
LOS ANGELES, CAL.

LONG BEACH OFFICE

PLANT AND LABORATORY
LONG BEACH, CALIFORNIA

Long Beach, Calif, June 21st, 1917.

Capt W. C. Crandall,

LaJolla California.

My dear Captain:-

Regarding rules and regulations for the control of kelp beds; We believe of primary importance is the matter of rotating the beds in such a manner as to warrant as much as possible the uniform yield.

Second, that the beds should be properly apportioned so that those companies already in the business, whether large or small may be given some fair chance of keeping their plants in operation and affording them some opportunity of getting their money back that has been spent; This opportionment of the beds should be regulated in proportion to the locality in which the company has invested their money;

Third, It should be prohibitive for anyone to harvest the kelp in any manner which would be detrimental to its propagation and conservation.

There may be other matters pertaining to the same, but we believe the above to be vitally important; We however feel that a more tried friend of the kelp industry could not have been selected than your good self, and we believe that you will show the same untiring effort in the future as you have in the past, in working for the proper development of this industry.

We are,

Respectfully,

Pacific Products Company of California

By W. Bourn Fisher

Secy & Mgr

jwt-r

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS.
INVESTIGATION OF FERTILIZER RESOURCES.
EXPERIMENTAL PLANT FOR THE EXTRACTION OF POTASH FROM KELP.
SUMMERLAND, CALIFORNIA.

June 21st, 1917.

Prof. W. C. Crandall,
Scripps Inst. for Biological Research,
La Jolla, Calif.

Dear Crandall:-

In further reply to your inquiry of the 25th ultimo, permit me to say, that while my ideas on what should go into the rules and regulations for the control of the kelp beds have not been given the opportunity of crystallizing very definitely (crystals, as you know, having difficulty in growing in an agitated medium), I should say that I should like to see the rules contain all provisions that are possible under the law which will tend to eliminate competitive cutting. Such provisions, you will remember, I wanted inserted in the law itself, but was overruled on that and the elimination of such a provision from the bill, which I think is its worst feature. We, in this neighborhood, I believe, will find it to our advantage to continue the mutual agreement we have, which binds us to respect each others rights on certain areas of kelp mutually agreed upon. This agreement also binds us to keep off entirely of certain beds which certain citizens of the community wanted left untouched. As you know, we are in a very sensitive community. They are all waiting with interest for our first indiscreet act to make it hot for us here, and we must steer a careful course between the conditions imposed by the local Supervisors and those prescribed by the new bill to avoid trouble.

To be sure, the new law does not contemplate the wishes of local boards of Supervisors, but it is supposed to have regard for the best interests of the kelp industry. Its operation therefore, should not be permitted to make our position any more difficult.

As you know so much more about the effect of cutting kelp and the periods necessary for its regrowth than I do, I hesitate to offer any suggestions relative to regulations dealing with those matters. I hope you will let me know when the meeting is to take place, as I should like to be present.

With all good wishes to you,

Yours very sincerely,

In Charge.

Swift & Company

KELP WORKS

Telephone Main 560

San Diego, Cal., June 26, 1917.

Mr. W. C. Crandall,
Scripps Biological Institute,
La Jolla, Calif.

My dear Mr. Crandall:-

Enclosed please find five snap shots taken during our trip on the "Bahada."

With best personal wishes, I remain,

Yours truly,

SWIFT & COMPANY KELP WORKS,

By.

HW:H

jwt-r

Copy for Prof. W. C. Crandall.

July 6th, 1917.

Mr. Hugh Holdaway,
C/o Utah Silica Products Co.,
554 Fourth St., Ogden, Utah.

Dear Sir:-

Replying to your inquiry of May 6th, which has just reached us, relative to the transplanting of kelp into the Great Salt Lake, permit me to say that I have forwarded your letter to Prof. W. C. Crandall of the Scripps Marine Biological Station at La Jolla, Cal., who is a specialist in the study of the life history and growth of the potash kelps. You will doubtless hear from him in due season.

Very truly yours,

In Charge.

jwt-r

Copy for Prof. W. C. Crandall.

July 6th, 1914.

Mr. Hugh Holdaway,
c/o Utah Silica Products Co.,
554 Fourth St., Ogden, Utah.

Dear Sir:-

Replying to your inquiry of May 6th, which has just reached us, relative to the transplanting of kelp into the Great Salt Lake, permit me to say that I have forwarded your letter to Prof. W. C. Crandall of the Scripps Marine Biological Station at La Jolla, Cal., who is a specialist in the study of the life history and growth of the potash kelps. You will doubtless hear from him in due season.

Very truly yours,

In Charge.

Copy.

UTAH SILICA PRODUCTS CO.

554 Fourth St.,

Ogden, Utah, May 6th, 1917.

Agricultural Department,

Federal Building,

Los Angeles, Cal.

Gentlemen:-

Have you any treatise on the cultivation or care of Kelp or any information as to the possibility of transplanting it into Great Salt Lake? Where the rivers empty we have an area where the water is about 5% or 6% salt then main body runs about 22% salt. Would either or both places be too strong for the growing of Kelp?

If your department can furnish this information or any information on the Mfg. of Pot. Ash, we will be pleased to pay for the trouble. In case you cannot furnish he information you may be able to refer us to the right source.

Thanking you in advance for any assistance you may be able to give, we are,

Sincerely,

Utah Silica Products Co.

Hugh Holdaway,

Secy. Treas.

THE LORNED MANUFACTURING COMPANY
INCORPORATED

MAKERS OF
POTASH AND FERTILIZERS

G. W. SIMMONS, PRESIDENT
L. H. THOMPSON, VICE-PRESIDENT
A. H. BRYANT, VICE-PRESIDENT
L. S. HASLAM, TREASURER
EDW. J. PORTEOUS, ASST. TREASURER
GEO. B. HARRIS, SECRETARY

1724 WHITEHALL BUILDING
NEW YORK CITY
910 SPRUCE STREET
ST. LOUIS
FACTORY AT
LONG BEACH, CAL.
FACTORY AT
SUMMERLAND, CAL.

Long Beach, Calif. July13,1917

Mr W.C.Crandall
La Jolla, Calif.

My Dear Mr Crandall:

I am writing you to tell you of the present conditions of the beds,

We thought that bed 24 also Point Dume was in reserve. we now find that when we opened up bed 24, someone had cut it out, so there was nothing to do but to open the Point Dume beds, now we find someone has also cut them clean, as it now stands there is no bed in reserve and all beds have been cut clean, this put everyone here in a bad fix, but they have no one to blame but "theirselves", the royalty for tonnage undoubtedly filled the bins for the time, but now everyone is suffering from it.

We are seriously considering the moving of this plant to Summerland and while we will watch this locality for a while it will be at least 90 days after you take charge that a bed will be opened up, in the meantime we will rush the Summerland. and we shall continue to conserve the beds that are alloted to us for our own protection, that is keep a weather eye on the Captains that the beds will not be depleated, just because there is some kelp there.

You sure have some job ahead- Wife sends her best regards to Mrs C, kindly accept my-own

Respectfully

Edw. J. Porteous

jwt-r

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS.
INVESTIGATION OF FERTILIZER RESOURCES.
EXPERIMENTAL PLANT FOR THE EXTRACTION OF POTASH FROM KELP.
SUMMERLAND, CALIFORNIA.

July 13th, 1917.

Prof. W. C. Crandall,
Scripps Inst. for Biological Research,
La Jolla, Cal.

Dear Crandall:-

I am a long time getting to this, transmitting to you the information requested, as I have not been able to get the information myself sooner. I surrendered my blue print showing the areas of kelp restricted for our own operations, and have just been able to get another copy. For the purpose of restricting the operations of the local kelp harvesters, the Board of Supervisors of Santa Barbara County divided the kelp beds into areas on the basis of minutes, longitude and latitude. The beds which were set aside for our own use are as follows:

34° - 24' to 25'; 34, to 36' ; 48' to 49'; 52' to 53'.

34° - 23' to 24'.

119° - 42' to 43'; 52' to 53'.

34° - 25' to 26'.

119° - 55' to 56'.

We agreed with the County Supervisors and also with Senator Thompson, as you remember, to keep off entirely, certain areas lying adjacent to the beach of Santa Barbara. These areas are as follows:

34° - 24' to 25'.

119° - 37' to 41'.

34° - 23' to 24'.

119° - 41' to 42'.

We have agreed furthermore, to cut no kelp to a depth lower than 6 ft. from the surface, and to leave at all times a strip at least 200 ft. in width throughout the entire length of the beds, which strip shall not be cut until that adjacent shall have made new growth to the surface of the water at high tide.

If certain areas are to be restricted for the government's operations and observations, it seems to me it would be better to have them abut the areas which are to be reserved for the benefit of the City of Santa Barbara, in which case it would be better to have our area extend from 34° - 24' to 25', and 119° - 35' to 37', instead of 34' to 36' as mentioned above. This will give us the entire area extending in front of Summerland and will make us entirely responsible for that area, which will also make it much easier to maintain the boundaries.

In formulating the regulations with regard to these beds I trust that the regulations will not be so binding that it will not be possible gradually by demonstration to overcome the prejudices of the local authorities. There is no reason known to you or us why all of the kelp in this locality should not be cropped, especially during the Spring and Summer months. By showing the local authorities that these areas of kelp can be utilized without detriment to anything or anybody we shall overcome their prejudices and ultimately be permitted to harvest the entire area under the supervision of your Board.

Trusting that this is the information you desire, and with further regrets that I could not get it to you sooner, I am,

Yours very truly,

J. W. Turrentine

In Charge.

THE LORNED MANUFACTURING COMPANY
INCORPORATED

G. W. SIMMONS, PRESIDENT
L. H. THOMPSON, VICE-PRESIDENT
A. H. BRYANT, VICE-PRESIDENT
L. S. HASLAM, TREASURER
EDW. J. PORTEOUS, ASST. TREASURER
GEO. B. HARRIS, SECRETARY

MAKERS OF
POTASH AND FERTILIZERS

1724 WHITEHALL BUILDING
NEW YORK CITY
910 SPRUCE STREET
ST. LOUIS
FACTORY AT
LONG BEACH, CAL.
FACTORY AT
SUMMERLAND, CAL.

Long Beach, Calif.,
July 21, 1917.

Dr. W. C. Crandall,
Scripps Institution,
La Jolla, California.

Dear Dr. Crandall:

I enclose herewith copy of a letter we have just addressed to the Fish and Game Commission, San Francisco.

I assume that some sort of word has been sent to us of a meeting, but nobody in our organization seems to have received it. Will you please advise us on this as we should be very glad to be present and be of what assistance we can, not only in the original structure of these rules and regulations, but in furnishing information that you may find useful in adjusting them to fit new conditions as they develop.

With kind personal regards,

Very truly yours,

L. H. Thompson

Enclosure

LHT*ELB

Long Beach, Calif.,
July 21, 1917.

Fish and Game Commission,
New Call Building,
San Francisco, California.

Gentlemen:

Is it your plan to notify the Kelp manufacturers how and when they shall make application for license under the new State law, which we understand from the papers becomes effective July 27th?

Any information you can give us on this will be appreciated.

We are just in receipt of a telegram from Swift & Co., Kelp Works, as follows:

"All San Diego representatives have met Fish and Game Commission and it has been decided to postpone meeting until Thursday morning."

We haven't received any other advice than this of a date and place of meeting, and do not understand from this telegram where this meeting is to be Thursday morning, which we assume is Thursday, July 26th. We should be very glad to attend the meeting wherever it is, and to do anything we can to be of assistance with what information we have from a year and a half study of the Kelp growth in the formation of rules and regulations under which the Kelp manufacturers are to operate.

Very respectfully yours,

THE LORNED MANUFACTURING CO.

Vice-President.

LHT*ELB

Long Beach, Calif.,
July 21, 1917.

Plan and Game Commission,
New Call Building,
San Francisco, California.

Gentlemen:

Is it your plan to notify the Kelp manufacturers how and when they shall make application for licenses under the new State law, which we understand from the papers becomes effective July 27th?

Any information you can give us on this will be appreciated.

We are just in receipt of a telegram from Swift & Co., Kelp Works, as follows:

"All San Diego representatives have met Plan and Game Commission and it has been decided to postpone meeting until Thursday morning."

We haven't received any other advise than this of a date and place of meeting, and do not understand from this telegram where this meeting is to be Thursday morning, which we assume is Thursday, July 26th. We should be very glad to attend the meeting wherever it is, and to do anything we can to be of assistance with what information we have from a year and a half study of the Kelp growth in the formation of rules and regulations under which the Kelp manufacturers are to operate.

Very respectfully yours,

THE LOOMIS MANUFACTURING CO.

Vice-President.

LMT*ELB

THE SCRIPPS INSTITUTION FOR BIOLOGICAL RESEARCH
OF THE
UNIVERSITY OF CALIFORNIA

LOCATED AT LA JOLLA
NEAR
SAN DIEGO, CALIFORNIA

LA JOLLA, CALIFORNIA,

July 23rd 1917.

Mr.Hugh Holdaway,

Ogden,Utah.

Dear Sir:

Your letter of May 6th to Agricultural Dept. has just been refered to me. Nothing is known about the possibility of transplanting of kelp in the Great Salt Lake. However the conditions in the Great Salt Lake on the whole are too salt and also there is too little current and wave action. Also there being so little life in Great Salt Lake, there is probably also a lack of CO2 which is necessary for the plant growth. I do not believe there is a single chance of tranplanting kelp in the Great Salt Lake.

Yours truly,

Collaborator.

July 30th 1917

Mr.N.B.Scofield,

San Francisco,Cal.

My dear Mr.Scofield:

I am sending the paper that Edw. Bert-sous sent me which gives many of his observations for the past two years. After careful reading, it seems to me that you might use some of it in one of your Bulletins". As your editor will cut and edit anyway, I have made no notations or alterations in the manuscript. Your idea of making a kelp edition seemed a mighty good one to me and I hope that you are able to carry your idea out.

I looked up the "Pacific Fisherman" article that seems to have caused Thompson to get off his feed according to what you said the other day. Regarding a portion of the work noted in the article,- Thompson certainly is aware of actual facts and should not be misled by a reporter's writeup/ He has been told absolutely what is being done bybus, has been accorded every facility and assistance that we can offer and he has been told concerning the aims of the Institution. That we are after plankton, and the hydrography of of the ocean together with the relationships of these factors with fishes etc. is a well known fact and is in keeping with the continued program of the Institution. In so far as the tuna touch this problem, we of course are interested. In fact the results from the general compilation of results will ultimately be of great interest and value to you in your commercial fisheries. So I only wish to reiterate the further necessity for co-operation between

the Commission and the University for doing work in the ocean. Our problems are distinct and yet overlap in a few details and those s small details should not cause friction when we consider the objects to be finally obtained.

One other point that may be spoken of is, is that we have been delegated by the University to do ever thing in our power to assist in the preparation for war. As you recall, certain things have been delegated to the "Zoological Investigations Committee" and we are endeavoring to do our bit in this work. In this connection I don't feel that any of us can be backward in getting to brass tacks as soon as possible and what we get should be given to those the information will help as soon as possible. It is for this reason that we are intensifying our work on the gamble that we may be of help in getting at a few means of helping in the problems of the war. Most of our Staff is at work that is related to the usual work but in an unusual manner.

Regarding the fact that various people and companies come to us for information concerning tuna and allied subjects, the answer is simple as you made it in our conversation the other day when you said that the Southern District was not in sympathy with its patrons. Naturally those have gone to places where they were received and at least listened to. As soon as Thompson gets established and his work known, he will take over this type of work and we certainly will co-operate in putting him on the map as we feel that he is a good man and will get at the fisheries side at once. Because of the exigencies of the ~~less~~ the time, he will also have available much material that he is free to use which would not in the way of prepa-

ration were it not for the war.

Last Sunday I went out on the Pint Loma beds and established the line between the closed and open beds. I took the U.S.C.& G.S. chart # 5106 corrected to Jun 14th 1917 and ran the line from the Coronado Hotel thrugh the the bar light Fl W 3 S.D. and this line extended through thekelp beds. This gives a good line ~~mark~~ of location for opening all kelp south of this line. It also gives a good quantity of kelp for the handpickers. This will give a more definite line than the one we took as approximately 32- 40'. As soon as possible, I think that we should make some blueprints marking the beds and showing the lines on them. When you get down this way again we can take this matter up.

I went down to the Tia Juana beds also on Sunday but the current was pulling the kelp under at the time so that I could tell very little about them.

Trustingthat you are having a good trip, I am

Sincerely yours

Business Manager.

Scripps Inst itution

Ritter	1000	
Micheal	1000	
McEwen	1000	
Crandall	1000	
Ross	600	
Barnhart	500	
Kofoid	500	
Univ.	1000	
Essenberg	600	
Thone	300	
Boat and Equip	1500	9100

Fish and Game Commission		
Thompson	2000	
Nidever	1000	
Scofield	300	
Boat	1200	4500

State Council of Defense			
Allen	2100		
Warnock	300		
Gen'l Work	1000	3400	$17000

Condition of Kelp

La Jolla Cal.

Aug. 11th 1917.

Chief, Bureau of Soils,

Washington D.C.

Dear Sir:

Since my last report on July 10th, there has been considerable doing in the kelp situation. On the 24th of July, I left with Dr. C.A. Kofoid of the Univ of Cal to investigate a rumor that the kelp was rotting unusually badly along the coast in various places. The reported condition was that the kelp was showing a black rot. Also the heavy beds that were near Santa Barbara we e reported as practically sloughed off. We went from here early on Monday the 24th stopping at San Juan Point to take samples of the kelp together with the water at that point. Little kelp was ashore and that seen was then normal altho I had recently seen it in a blackened tip condition. Evidently the kelp was regaining its normal condition again. Water was examined for "Red Water" or the phosporescent protozoa that has been present in the water in large quantities during the spring and late summer at various points along the Coast. No "Red Water was found at this time in this region.

We then drove to Long Beach and took a boat belonging to the Lorned Manufacturing Co. and went out as far as Point Vincente. These beds had been thoroughly cut but were showing a marked increase in growth so that a normal condition prevailed. In this same region the normal yearly sloughing had occured in addition to the intensified cutting that had taken place on the part of the companies that were trying to

get all the kelp possible beforethe State Law #75 Assembly went into effect. They got the kelp and are now shut down because of their greediness in overcutting the beds. No "Red Water " was found until we got nearly to Point Vincente where a great deal of Gonyaulax appeared which is one of the common kinds of "Red Water". This condition had not been marked in this region however and no evidences of unusual rottinh were evident.

We then drove on to Summerland where I was unable to see Dr.Turrentin as we had passed each other on the road. However we went out on one of the horned harvestors and looked at the kelp in that region. Here sloughing had been abnormally great as see my last report on the growth in this region. Also "Red Water " still prevailed to a great extent and it had prevailed to such an extent that large quantities of lobsters had died from the effect and had drifted ashore. Whether this is the cause of the kelp sloughing off so extensively or not is a question but whenever the "Red Water " Occurs in great quantities fish are usually killed and a general condition of stagnation seems to be present. Undoubtedly the oxygen is used out of the water and the animals and plants become starved for it. In spite of the sloughing, the beds still have considerable kelp in them and plenty of new plants were showing.

In all of the above conditions, you will note by reference to last years reports that the same condition prevailed then to a large extent and it was at this time that there were so many hurry calls from the beaches on account of the loose kelp floating ashore and making the beaches uninhabitable.

On the 26th I attnded the meeting of theState Fish and Game Commission and the Kelp Manufacturers. Dr.Turrentine was also present. At this meeting I advised the closing of all the beds along the Coast ~~adjacent-t~~ from a line drawn from the Coronado Hotel through Bar Buoy Occulting Light San Diego Bay and extended thru the kelp beds north to and including San Juan Point. Also all the beds from a point opposite White Point near San Pedro west and north to Redondo. Also the beds set aside in Santa Barbara County as desired by Dr.Turrentine and the City of Santa Barbara. All the Channel Islands were left open and probably will remain so so as to give every incentive for their harvesting. By the above action and certain agreements that were entered into, the Government was given everything that it asked for, the handpickers were atken care of and all were apparently fairly well satisfied in regard to the action taken. The State Law went into effect on the 27th. The machinery is now inoperation whereby I believe we can now control the kelp beds and get more kelp and harvest it as it evidently should be harvested. i.e. we will open the beds so as to have the heavy kelp harvested before the beds slough off in the early summer and the late fall. If I can get ahold of the right man, I shall be able now to use him in many kelp experiments that have been ineffectual heretofore because of lack of assistance. With the co operation of the many men interested in kelp together with a special worker or two we undoubtedly will gain ground constantly. Mr.Hidever, the representative of the Fish and Game Commission who will have charge of the policing of the beds is a good ~~man~~

a good man and will be a fair and impartial man in his dealing with all concerned.

During this last month Swift and Co and Hercules Powder Co. have been harvesting at St.Nicolas Is. So far they have gotten fine kelp but Hercules has also found several rocks and lost three wheels from their harvestors. At present they are trying to make some arrangements with Gov.Cantu of Lower Calif. to get kelp from the beds at Coronado Is. and south along to Coast as far as Ensenada.

Hercules Powder Co. is now under Gov. orders to try and get out iodine, sodium alginate and several other chemicals. They are getting some good results altho they are still meeting with a good many reverses.

Swift and Co. is having some trouble with the local health authorities because of the odors that come from the plant. They have no smoke consumers on and as a result there is a very pungent odor that travels well over the city. Considerable complaint has been made against this odor and later some action will undoubtedly be taken agains them. On account of the need of potash as fertilizer, however, this action will undoubtedly be deferred for the present. They may ask you for approval in their work and also a statement as to the real need of the potash from the standpoint of the farmer. There is no doubt about the odor being a rather disagreeable one and I am in hopes that Mr.Turrentine's work will soon show some method of getting rid of this drawback to the industry.

Yours truly

W.C. Crawford

Aug.12th 1917

Howard W.Judson,

Long Beach Cal.

My dear Mr.Judson:

Your letter of the 11th is at hand. Thank you for the information. I am writing Mr.Nidever informing him of the same so that he may take the matter up with the handpickers. If you should happen to see Mr.Nidever soon, will you kindly give him the details as you know them.

Yours truly

W C Crawford

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS.
INVESTIGATION OF FERTILIZER RESOURCES.
EXPERIMENTAL PLANT FOR THE EXTRACTION OF POTASH FROM KELP.
SUMMERLAND, CALIFORNIA.

August 13th, 1917.

Prof. W. C. Crandall,
Scripps Inst. for Biological Research,
La Jolla, Cal.

Dear Crandall:-

I am interested in whatever report you have to make with regard to the kelp situation as the result of your recent investigations. In this neighborhood so far as we can judge, the old kelp entire disappeared. Of course, we are in hopes that the young kelp will promptly supplant the old. We would like to have your opinion as to the length of time it will take for this to come about. In the meantime it looks as though we were going to be rather put to it for enough kelp to operate with.

What can you tell me about the kelp beds to the south of us? Is there any kelp there that we could draw on to a limited extent to keep us going while our own beds are restoring themselves?

Do you not think it would be advisable to make a general survey of the situation, especially to the north of Santa Barbara? If the events in the kelp fields of the past few months are something that we can look forward to as an annual occurrence or even as a frequent occurrence, it seems to me that it is a matter of great importance to determine all the facts in the case that we can. Please let me hear from you at your earliest convenience with regard to the foregoing.

With all good wishes,

Yours very sincerely,

J W Turrentine

In Charge.

Form 1204

CLASS OF SERVICE	SYMBOL
Day Message	
Day Letter	Blue
Night Message	Nite
Night Letter	N L

If none of these three symbols appears after the check (number of words) this is a day message. Otherwise its character is indicated by the symbol appearing after the check.

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

CLASS OF SERVICE	SYMBOL
Day Message	
Day Letter	Blue
Night Message	Nite
Night Letter	N L

If none of these three symbols appears after the check (number of words) this is a day message. Otherwise its character is indicated by the symbol appearing after the check.

RECEIVED AT

7BY F 24

LONGBEACH CALIF AUG 15 1917 805AM

W C CRANDALL

LAJOLLA CALIF

SOME QUESTION AS TO DESCRIPTION OF BEDS TO BE CLOSED SEND SCOFIELD AT ST ACCURATE DESCRIPTION BEDS TO BE CLOSED CANNOT CONTROL UNTIL NOTIFIED

H B NEDEVER

AUG 15 840AM

Found SJ 172
Mr Crandall
845 F
a
mail

Aug.15th 1917.

Mr. H.B.Scofield,

San Pranc sco,Cal.

My dear Mr.Scofield:

Mr.Hidever's telegram of last night states that I did not make clear the division lines for the closing of the kelp beds so here I go again.

Closing all beds north of a line SW 1/2 W of Flg Buoy #3 S.D Bay Chart 5100 or 5106 Coast and Geodetic Surveycorrected to June 1917 along the coast t o Laguna Beach.

(or a line drawn from the Hotel Tower of the Hotel Coronado through the Flg Buoy # 3 S.D.Bay and extended through the kelp beds.)

Closing all the beds west and north of Longitude 118 19' to Redondo Beach along the coast. Chart 5143.

(or from a line perpendicular to the coast at Whites Point along the coast to Redondo Beach.)

I don't believe there can be any doubt regarding the Santa Barbara closing.

Concerning the cutting in the closed areasat the present time, the men doing so are not licensed and so it seems to me that if they are unwilling to abide by the action of suggested closing that they had bet-ter be refused the privelege of acting without the law as the beds where they are cutting need the rest very much. Kelp is running under at the present time and is hard to get but it will not help the beds any to be cut now as the young shoots are just getting their start.

Kelp Condition

Aug.16th 1917.

Dr.J W.Turrentine,

Summerland,Cal.

Dear Turrentine:

The condition that you are having at Summerland is an unusual one in the extent of the sloughing off of the kelp. Last year we had somewha the same condition but not so marked and it seems to be the habit of the kelp to slough off somewhat at this time of the year. The young kelp is coming along well however and within thrity days there ought to be a good crop for cutting. You will find no more kelp south of you than you have near Summerland and from t the manner of sloughing this year, I do not think that you will find it to to the north now. About the islands it has not begun to slough off just yet and your only show right now is to get the kelp about the islands near you. There is good kelp according to report at Anacapa Island and at Santa Cruz. The sloughing has occured later near you than here and the kelp is now getting up ready for cutting in a short time here.

Today I took a boat and went out over the beds from San Diego to La Jolla and I find that practically all the kelp that is old has sloughed off while the young plants are really showing up in great shape. Much of the old kelp shows the bedraggled, black ends that caused such a stir a short time ago but coming near the surface the young shoots are showing well and thick. Much of the local beds are showing a good surface growth so that within thirty days the local beds ought to be ready for cutting.

The feature that is really gratifying is that all the beds along shore are acting in the same manner this year and this action as it is now continued does not frighten me as much as when I saw the local beds depleted and the strong beds present about Summerland. I was afraid that we were

overcutting the beds and that they were really going to fail us. Now that fear is gone and the only question is whether this is a cycle growth when the beds naturally lose their strength and then build up again. I have held for sometime a view that the beds had a cycle in years (three years 1st heavy- 2nd medium- third light etc.) The condition this neaxt year should show whether this belief is correct or false.

You will recall that I made the first survey in August and then I found small scattered beds between La Jolla and San Juan Point. Since then the harvetors ahve gotten good yields from that same area. I have a suspicion that I ran into a similar condition that year.

On July 3rd of last year there was a hurry call from Redondo concerning thebkelp nuisance, and I found every evidence at that time that a normal sloughing was going on and that it was not cut kelp.

This last two weeks I have been noticing the kelp coming ashore here near the Station and it is old kelp that escaped the harvestors.

Within thirty days, I think your troubles will be over for want of kelp and hereafter we will want to see that all beds along the coast are cut by August 1st. Also we will have to look out for a smaller slough along in December.

A trip is being planned for the near future to take in all the beds along the coast and around the islands.

Yours sincerely

August 16th 1917

Mr.H.B.Nidever,

Long Beach,Cal.

My dear Mr.Nidever:

The sloughing of the kelp along the coast has spread consternation amongst a good many of the men engaged in the work but this condition has occured to a greater or less extent in previous years so that a little wait will bring them the kelp again. I was out today and looked over the local beds. All the old surface kelp is practically gone and the new tender shoots are just getting to the top in good shape. If we can keep the handpickers off for the present together with the larger companies by moral persuasion at least, I believe that we will have a good yield this fall. At present the handpickers are spicking about in the beds where ever they can find this kelp growing up to the surface and it is not a good proposition . The handpickers object to Swift small harvester cutting a channel for the fishing boat s along the line separating the closed from the open area and both sides state that the other is breaking over. I suspect that there may be something on both sides. I knw that the handpickers are over the line as I saw three outfits over the line today. Also I have hea d from various sources that others have been over the line. The handpickers claim that they go only where the Swift # 3 is cutting the channel but I went up to the district they make the claim about and I cannot find evidence that the harvestor has been up there. Watson of Swift is hot under the collar and says he will go up and cut them out and th handpickers say that they are going to get kelp wherever there is kelp so there we are. I am feeling that they will both have to come to time and stay out if we are really to have good kelp this fall.

Watson is really not getting much kelp as shown by his harvestor or by his logs. so I think he will agree to stay out entirely. I have had a talk with Bent and he feels the same as myself namely that the #3 is a red rag while cutting a channel and that ~~they~~ the situation can be handled only by cutting out everything noth of the lines laid down and let the channel go hang. A channel through the kelp is a good thing but we had better be without the channel than have a mixup over it.

I was in hopes that we could get a channel through the kelp and then get the fish boats to go through it as they now are apparently doing but the harvestors will have too wide a channel so as to take up the whole bed a the present rate.

I counted 22 small barges today in the bay and on the beds.

Let me know where to find you when I come up as I am going to try and be in San Pedro on Monday.

Yours sincerely

THE LORNED MANUFACTURING COMPANY
INCORPORATED

G. W. SIMMONS, PRESIDENT
L. H. THOMPSON, VICE-PRESIDENT
A. H. BRYANT, VICE-PRESIDENT
L. S. HASLAM, TREASURER
EDW. J. PORTEOUS, ASST. TREASURER
GEO. B. HARRIS, SECRETARY

MAKERS OF
POTASH AND FERTILIZERS

1724 WHITEHALL BUILDING
NEW YORK CITY
910 SPRUCE STREET
ST. LOUIS
FACTORY AT
LONG BEACH, CAL.
FACTORY AT
SUMMERLAND, CAL.

Long Beach, Calif.,
August 20, 1917.

Capt. W. C. Crandall,
Scripps Institution,
La Jolla, California.

Dear Capt. Crandall:

The Kelp beds off Summerland and neighboring fields continue to disintegrate and disappear until now you can hardly see that there has ever been a Kelp bed in the area from our Summerland pier east to Carpinteria.

For the last two weeks we have had to go from ten to twenty-five miles to get Kelp to keep our Santa Barbara plant going.

There is a nice new growth apparent below the surface of the water, and if the beds are properly treated, we will have just as good a Kelp field there as ever by fall. The value of a Kelp bed in front of Summerland is more than simply a supply to harvest from, as we believe it is of some value as a breakwater during the winter storms. It seems to us, therefore, that it is not only proper but important that the Commission declare closed all of the beds #10 and #11--bed #10 being the Rincon Bed and bed #11 extending from Carpinteria to Santa Barbara light. I am in receipt of letters from Dr. Turrentine and our Summerland Manager, Harris, strongly advising that I make this request. Mr. Harris has seen the California Chemical Company manager, and he also thinks these beds should be closed for regrowth.

Very truly yours,

THE LORNED MANUFACTURING CO.

L. H. Thompson,

Vice-President.

Transcribed after
Mr. Thompson left
his office.

LHT*ELB

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

INVESTIGATION OF FERTILIZER RESOURCES.

La Jolla Cal.

Sept.2nd 1917.

Chief, Bureau of Soils,

Washington D.C.

Dear Sir:

On the 23rd of last month I went on a tour of inspection of the kelp from San Diego to north of Santa Barbara. Also I received reports of conditions out around the islands. I returned on August 27th to La Jolla but left immediately on the request of the Food Administrator, Mr.Merritt, to assist Dr. E.D.Clark in his work along food lines. As a result I have just retrned and thus account for the delay in making my report.

August 23rd. Left La Jolla for Long Beach arriving there about 6:30 P.M. Immediately got in contact with Mr.Porteous of Lorned Mnf. Company who was to arrange for a trip about the beds the next day. Then saw Mr.H.B.Nidever of the Calif.State Game and Fish Commission and asked him to go on the trip.

August 24th. In company with Mr.Nidever, State F&G Mr.Porteous, Lorned Mnf.Co. : Mr. Judson and Mr.Neff, Sea Products Co.: Mr.Ennis, Pacific Products Co, I left at 8:30 A.M. on the Crowlpy as th guest of Mr. nnis. We proceeded up along the coast taking in all the beds from Point Firmin to Redondo. Bed 21 had remained open after July 21st when the State Law went into effect and showed that it needed a rest. I advised Mr.Nidever to have the bed closed.

Bed 22 had been closed from July 27th but someone had evidently been poaching to some extent in the bed. However it was not in bad shape in the northern part and I advised the closing of the bed for thirty days. Beds 23 and 24 had not been opened since July 27th and had not been cut

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

INVESTIGATION OF FERTILIZER RESOURCES.

for some time previous to this. The bed was very well grown back but there was present the appearance of black rot that has appeared to do so much damage this year. This bed I advised Mr.Nidever to open at once as the kelp had reached its full growth and was beginning to slough off to some extent.

Wereturned to Long Beach and Mr.Judson, Mr.Ennis, Mr.Nidever and myself went over to see Mr.Peiffer, Mgr. of Diamond Match Co,at Wilmington and it was settled that the beds should be opened and closed according to my recommendation on the 28th of July.

I then left by auto for Santa Barbara arriving at 10:30 P.M. I had communicated with Dr.Turrentine that I was coming to see what had better be done with the beds about Santa Barbara as he hadwired and written me concerning them.

Saturday A.M. at 9 we left on the Burau boat the John Priestley and went over the beds about Santa Barbara. The beds had sloughed off the bulk of kelp that I previously reported as being there but the kelp remaining was fully matured and I advised that it be cut as there were few growing young tips near the surface and the presence of black rot seemed to make it advisable to cut the same. I also recommended that the same action be taken in the beds other than those controlled by the Bureau to Mr.N Nidever. After returning Dr.Turrentine and myself tried to find State Senator Thompson of Santa Barbara to talk over the situation with him. He was not in at the time so I remained in Santa Barbara that night.

Sunday A.I.found sited Ben.Shobesoneacontalted toethehpreitamtofncut-
with him and

ting the kelp. He is n w a friend of those inter ested in the harvesting of kelp and promises to do all that he can to assist in converting the public about Santa Barbara to his opinion. By starting in at this time, I feel that we may hope to have a different attitude prevailing amongst the people of Santa Barbara when the next legislature convenes.

Sunday P.M. I motored to Long Beach where I stopped for the night. Monday A.M. I met Mr.Nidever and went over the entire situation with him and he got out his official notices to all people concerned in cutting the kelp/ Monday P.M. I motored to La Jolla. I covered 495 miles on the trip with the auto which belongs to the Scripps Institution

Previous to this trip I took a boat on Sunday Aug.19th from San Diego and went along the beds from San Diego to La Jolla. These beds are recovering fast from the previous cutting and will be opened for cutting Sept . 15th. Some trouble has occured in controlling the handpickers in the closed areas but for the most part a cooperative spirit has been met with in matters relating to the kelp beds.

At present Hercules Powder Co and Swift Co. are cutting kelp at St.Nicolas Is. This is long haul but the kelp has been good and they are getting a good quantity from there. The winter weather will soon stop the work there however and they will have to come back nearer the mainland. No deterioration of kelp has occured about the islands at this time.

Peculiar conditions have prevailed along the coast this year and I believe that these conditions have had a great deal to do with the

condition of the kelp. The kelp along the mainland has been in an area of the ocean that has had present a large amount of red water. This red water has been so extensive that it has caused many shell fish, lobsters etc. to die and be swept ashore. At the same time it has probably had its effect on the kelp. The red water is now made up of a phyto plankton form, Gonyaulex. It is found all along the coast but it appeared first in the southern waters and gradually appeare to the northward. The kelp deterioration first appeared in the southern waters and then proceeded to work up the coast. This deterioration has taken place irrespective of the previous cutting or freedom from cutting.

Temperature have bee running about 4 degrees centigrade higher this year than since 1905 according to Scripps Instituton records. So far in the study of kelp no such general sloughing has taken place. Altogether it seems probable that the temperatures have had something to do with tis deterioration either directly or else in the producing of a condition under which certain phyto plankton normally of small amount develop to great proportions. This great incease in temperature is not found about the islands and the kelp is present there in normal growth.

Respectfully submitted

Collaborator.

COMMISSIONERS
F. M. NEWBERT
M. J. CONNELL
E. L. BOSQUI

EXECUTIVE OFFICER
CARL WESTERFELD

FISH AND GAME COMMISSION
OF CALIFORNIA

SAN FRANCISCO Sept. 13, 1917

Mr. W. C. Crandall,
The Scripps Institution,
La Jolla, California.

Dear Mr. Crandall:-

Your letter of September 8th has been received. I will get down to Southern California just as soon as I can get away from here. With the added work that has come with the new activities which we have taken up, we are about snowed under but what makes it worse is that I have given up Nidever and the man that he broke in to take his place has had to go into the License Department. The Commission has allowed me a stenographer and office helper and I hope to get caught up one of these times.

I have had several letters from you which I have been negligent in answering both because I have been behind in correspondence and because I expect to go down and the matters which we have under discussion are rather hard to handle in correspondence.

In the matter of kelp regulations we will depend mainly on you and Mr. Nidever and whatever you decide on will go.

In regard to the spot maps which Mr. Thompson isgetting from fishermen, Mr. Thompson at first thought that the spot maps you were getting would be all that he wanted but later he decided that he would prefer spot maps from the few fishermen from whose catch he was figuring out the curve of the run. I know that he will be perfectly willing for you to use the maps he collects and we will see that you have the use of them.

I hope you will keep in touch with Mr. Nidever for we are relying mainly on him to keep things running smoothly in Southern California. Whenever you are ready to run those lines let Nidever know in advance so that he can procure the boat for the work.

Did you use the young fish trawl on any of your former trips? As far as I can learn, Mr. Nidever and Thompson have not as yet caught much in their trawl.

Yours very truly,

N. B. Scofield

COMMERCIAL FISHERIES DEPARTMENT

S:GC

Sept. 17,1917

Mr. N. B. Scofield,

San Francisco, Cal.

My dear Mr. Scofield:

Your letter of Sept. 13th is at hand. Regarding your question as to the use of the young fish trawl, I regret to say that we have not used it on any of our former trips and therefore I don't know whether it is a success or a failure.

Mr. Nidever was in yesterday afternoon to see me and we talked over the kelp situation and decided to meet with the handpickers tomorrow evening when we can talk things over with them. Unfortunately I jammed one of my legs a little on a trip last week and so had to put the work of arranging a meeting on Mr. Nidever. In a day or two I hope to be around again on two good "pegs".

Sincerely yours,

Kelp Beds- Condition

Sept.21st 1917.

Chief,Bureau of Soils,

Washington,D.C.

Dear Sir:

Sunday morning the Wasatch, the Swift Co Launch left San Diego at 5 A.M. Sept 9th. Mr.Watson and Mr.Gould only aboard. They went up along the coast as far as San Pedro and reported that Kelp was scarce above La Jolla. Heavy current and wind however which may have run the kelp under.

Sunday night, Mr.Ennis and I joined the party and left at 12 P.M. for Santa Barbara. Had seen the Point Fer min beds recently so did not wait for daybreak to see them. Beds from Point Dume to Santa Barbara were very thin. Arrived Santa Barbara 4:30 P.M. All ashore and went through the Bureau Plant and Lorned Plant. Both working partly. Mr.Watson and Mr.Ennis were much interested and followed the processes through carefully.

Monday night 11 P.M. left Santa Barbara Mr.Thompson and Mr.Turrentine joining party. Went to channel between San Miguel and Santa Rosa as ocean to rough to go north and west of San Miguel. South west of Snata Rosa had good thick kelp. Went down along the south side of island to Santa Cruz. Kelp again on south west side altho not so heavy. This island had been cut by Lorned and Diamond Match. Went to Anacapa but beds were cut. Thence to Santa Barbara Is. and anchored for nighht. Wednesday A.M. ran to Santa Catalina and left Mr.Ennis. Then back to Santa Barbara Is. and over to San Nicolas. Kelp still present in good beds on East and North of Is. Hercules and Swift had cut the heavy

portions but had left a lot of good kelp that they were afraid to wait for. Anchored for the night. Left 1 A.M. for San Clemente arriving 5:30 A.M. Beds on west side show but are not heavy. Same condition down the windward side of the island. Also true in Smuggler's Cove. Left 1.P.M. and arrived San Diego 9 P.M. Friday Sept.14th.

General Summary Beds in poor condition.

Best beds La Jolla to Point Loma except beds about Santa Rosa.

Atpresent I have a man working on the kelp by the name of Brandt and he claims that he has some of the swarm spores taken from a frond off the kelp. I shall send him out tomorrow to see if he can find any of the similar condition in the beds. If he can as soon as my foot will admit, I will take him over all the beds as this is what we have been looking for namely the fruiting season. I am a little dubious about the results but shall follow them up.

Yours truly

Sept.25th 1917

Lorned Mnf. Co., Attention Mr.Porteous.

Summerland, Cal.

Dear Sirs:

The present research agent Mr Brandt has found some swarm spores on the Macrocystis. On the lower part of the plants there are some growths as if there were bunches of leaves growing out of one cyst. On these leaves you will find some brown patches which he finds to be sori So far these sori have been found only on these lowere special leaves and on a few of the regular lowere leaves. I am interested to see whether you have a similar condition with you. Look for patches of brown.

Also I am anxious to hear how you came out on the matter of grappling for kelp on the bottom. On material that is gotten in this way a careful search should be made to see whether there is an abundance of the brown spots present or not. This whole study is to see whether the fruiting season is the cause of the plants sinking or not.

Received pictures by Mr.Thompson which I appreciate very much especially the dust one.

With best wishes to all and trusting that I may be kept advised concerning the kelp conditions this fall ,I am

Sincerely yours

COMMISSIONERS
F. M. NEWBERT
M. J. CONNELL
E. L. BOSQUI

EXECUTIVE OFFICER
CARL WESTERFELD

FISH AND GAME COMMISSION
OF CALIFORNIA

SAN FRANCISCO Sept. 26, 1917.

Mr. W. C. Crandall,
The Scripps Institute,
La Jolla, California.

Dear Sir:-

We are enclosing a copy of a letter from Redondo Beach Chamber of Commerce. We would like to have your comments on the same that we may reply. We are also sending a copy to Mr. Nidever and think it would be a good plan for you and Mr. Nidever to see Mr. Rice, the Secretary.

Yours very truly,

N. B. Scofield

COMMERCIAL FISHERIES DEPARTMENT

NBS:GC

ADDRESS ALL COMMUNICATIONS "FISH AND GAME COMMISSION"

C O P Y
CHAMBER OF COMMERCE
REDONDO BEACH, CALIFORNIA.

September 3, 1917.

Mr. N. B. Scofield,
Fish & Game Commission,
Sacramento, California.

Dear Sir:-

Publication has been made in the various city newspapers of the arrangement for the regulation of the kelp industry under the supervision of the Fish and Game Commission of the State.

In addition to this the articles state that certain beds of which Redondo Beach was one, would be left alone for a period of time to avoid denuding the beds. I assume from the tenor of the articles which had seemingly been syndicated, that this was to be made immediately effective. If such is the case, this is to advise that the beds adjacent to this city are still being cut.

The interest of the city of Redondo Beach in this case is that preliminary steps had been made to either force a discontinuation of the cutting of these beds or to insist that the kelp cutters arrange to care for the refuse that this city has had to take care of all summer at a very heavy expense. At times this refuse was so thick and heavy that it could not be handled by man power and was left on the beach to rot. During parts of the summer season this rotting kelp and the flies were positively a menace to health. When the newspaper articles were published all tentative plans were abandoned believing that state regulations would enable us to at least handle the refuse with minimum loss. Now that no action has been taken this office feels that in justice to this city some arrangement should be made that will protect us against loss.

Itis not the policy of this office nor the city to attempt to reduce the harvesting of raw materials for potash but we do feel that inasmuch as the cutters are deriving the profits from the harvesting it is only fair that they stand the expense of cleaning up the refuse from our beaches. Redondo Beach was damaged this season to the extent of thousands of dollars. Cannot some fair adjustment be suggested by your office to guarantee us against loss and disease?

It would seem thatunder the present mode of cutting that a majority of the harvest was not saved by the machines. During the summer season we were forced to present to our guests a positively disreputable beach. To my personal knowledge we have lost hundreds of visitors because of this situation. It may be only a coincidence but it is fact that the cutting has been done on the Redondo beds during the summer season only and for patriotic reasons we held back aslong as possible before voicing any protest.

We would greatly appreciate your interest and assistance in formulating an equitable adjustment of this matter so thatboth parties affected may not endure loss.

Very truly yours,

(Signed) M.B. Rice

Commercial Secretary

THE LORNED MANUFACTURING COMPANY
INCORPORATED

G. W. SIMMONS, PRESIDENT
L. H. THOMPSON, VICE-PRESIDENT
A. H. BRYANT, VICE-PRESIDENT
L. S. HASLAM, TREASURER
EDW. J. PORTEOUS, ASST. TREASURER
GEO. B. HARRIS, SECRETARY

MAKERS OF
POTASH AND FERTILIZERS

1724 WHITEHALL BUILDING
NEW YORK CITY
910 SPRUCE STREET
ST. LOUIS
FACTORY AT
LONG BEACH, CAL.
FACTORY AT
SUMMERLAND, CAL.

Summerland, Calif.,
October 1, 1917.

Capt. W. C. Crandall,
c/o Scripps Institute,
La Jolla, California.

Dear Capt. Crandall:

I received your letter of September 25th, which was forwarded from Summerland to Long Beach, where I have been remaining over the past month. I myself have found what I thought was the swarm spores similar, but I was not sure of it, and I have been waiting to examine them under the microscope, which is still packed among the various laboratory equipment. I have also left word with the boys to do the dredging, and have only got a partial answer to it, stating that it was so that the Kelp did apparently lay on the bottom, but I did not see the thing handled myself.

As soon as I am permanently located at Summerland, which will be within a week or ten days, I will take up this matter personally.

Respectfully yours,

Edw. J. Porteous

EJP*ELB

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

FWB.J

INVESTIGATION OF FERTILIZER RESOURCES.

October 5, 1917.

Capt. W. C. Crandall,
Scripps Biological Institute,
La Jolla, California.

Dear Captain Crandall:

Your very interesting recent letters have been received, confirming what we have heard from Turrentine with regard to the condition of the kelp beds. Yesterday I had a long talk with Mr. Thompson, of the Lorned Manufacturing Company, and both he and Turrentine are of the opinion that the situation is very serious indeed. Thompson tells me that it is now sixty days since the disappearance of the kelp at Summerland, and that while normally thirty days is sufficient for the new growth to begin to show, as yet there is nothing to indicate new growth at that point. His opinion is that the air bladders of the old kelp have been punctured, that the kelp has sunk and now forms a mass on the bottom which inhibits the growth of the new plants. I would like to have your opinion on this point and also whether in your judgment it would be wise to do some dredging on limited areas to learn whether or not there is a mass of old kelp on the bottom, and whether its removal would hasten the renewal of the beds by a new growth. I should also like to know whether in your experience there has ever been a similar destruction of the beds in any such complete fashion as has taken place this summer. I understand that there is annually a certain dying of the kelp, which this summer seems to have been much more general and complete than usual. What I am trying to get at is the time it is likely to take for the renewal of the beds. I trust you will also keep us advised

of the results of your investigations of the problem. There seems to be a difference of opinion as to whether the "red water" is the cause or the effect of the dying of the kelp.

Very truly yours,

Frederick W. Brown.

In Charge.

Crandall, Capt. W. O., #2, 10-5-17.

of the results of your investigations of the problem. There seems to be a difference of opinion as to whether the "red water" is the cause or the effect of the dying of the kelp.

Very truly yours,

In Charge.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

INVESTIGATION OF FERTILIZER RESOURCES.

La Jolla Cal.,

Oct.11th 1917.

Chief, Bureau of Soils,

Washington D.C.

Dear Sir:

The letter of Frederich W.Brown, In Charge, of the 5th inst is just at hand. That the kelp situation is serious is admitted by all that are engaged in the work. The one redeeming feature is that the beds aht have been regularly harvested are coming along as well as usual and it is the virgin beds that are not able to hold their own. The Point Loma and La Jolla beds have been able to give their usual amount of kelp during the last cutting. They are now cutting in the fifth week and have at least another weeks cutting in viev. This is up to standard as cuttngs have gone. Mr.Watson of the Swift Co. returned this afternoon from a trip to St.Nicolas Is., Clemente Is and down along the Coast from San Juan Point to La Jolla. He reports that the kelp is coming along in good shape over at St.Nicolas but that at Clemente the kelp is now sloughing away as it did along the mainland a few weeks ago. Also that the kelp is very thin along the mainland. As he just got in and there is quite a breese on, I suspect that the kelp along the coast is going to show fairly well as a crop when they go to cut it next week. I was along the San Pedro beds aboard the S.S.Harvard a couple of weeks ago and the beds that were ordered closed are now in excellent shape and I see no reason for feeling blue on their account. The Redondo beds are now closed after having been cut for a matter of two months. I have now had an opportunity of getting away on kelp investigatinns for some

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INVESTIGATION OF FERTILIZER RESOURCES.

I hope to get aw y next week on Wednesday and take Dr.Brandt with me on a trip as far north as Santa Barbara to work out some ideas that I have co concerning the growth of the kelp.

My opinion is that with the increased temperatures of this year in the water, the best temperature for the growth of salt water bacteria was reached, also a temperature best for gonyaulex, prorocentrum etc., onecelled plants or animals according to whether you follow the bo-tanist or zaologist which form the red water. As a result the kelp has had a hard time to carry on its usual photosyntheyic activities. This would then mean that its gas forming qualities were limited and the gas contained in the bulbs would osmose out and no new gas would form. Tis would raise the specific gravity of the plants and they would then tend to sink. I suspect from the evidence that is at hand that this is what happened and that there is a mass of the kelp on the bottom of the ocean. Grappling hooks used already in the worst localities seem to bear this statement out. I believe that a most excellent experiment would be to have the government boat try a given section of the beds with grappling hooks to try and clear away any covering mass. I doubt the remaining of the mass on the beds but lean to the opinion that this mass is gradually worked inshore by the currents. However I shou d like to see it tried. Another ting that I have been trying to have done is to have a diver go down and report on the condition of the beds as he sees them on the ocean floor. So far I have been unable to get a diving suit for this work. More could be gained through this means than by the grappling means.

ADDRESS ALL COMMUNICATIONS TO
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INVESTIGATION OF FERTILIZER RESOURCES.

#3.

So far as I am aware no previous sloughing has occured similar to the present sl ughing altho there is a saying amongst the lobster fishermen that bout every five years the kelp beds are sloughed off and that the lobsters are killed by the kelp falling to the ocean floor. I have not had the opportunity of taking the lobster statistics for the last few years to see whether there is a curve of lobster catch or not. The fishermen say they do not go out when the kelp is sloughing.

Red water is not a cause of the kelp sloughing except as it tends to take up the same products for assimilation that the kelp does and so cuts off he kelp food. It is not a part of the kelp and is found at distances from the shore, in bights where the kelp is absent as well as with the kelp beds. It is simply one of those common factors that tend to form the equilibrium of life.

We now are getting the active spores from sori on the lower lamina of the kelp and so are in a far better posi-tion in that regard than we were.

Sincerely yours.

Collaborator.

Oct.13th 1917.

H.B.Nidever,

518 W 6th St.,

Long Beach Cal.

My dear Nidever:

Work has been coming fast and furious the last few days and it has been impossible for me to get away this week. If plans carry out for next week, I will leave here Wednesday noon or evening and drive to Long Beach so as to spend Thursday there anywhere that you may have in mind. I shall want to go out on the eds and possible go and talk to our Redondo friends particularly if some work that Brandt is d ing seems to come to a head by that time. Then I ex ect to pull on to Santa Barbara Thursday night of Friday . Then I shall leave Brandt there and probably go on to San Francisco for a day and then back to anta Barbara for a couple of days and then back track to Long Beach. That will give me about a eek on the road.

At present I am having some enlargements made for either blue prints or rints of the elp beds in which the new system will be used. I am working on the preliminaries and will try and have something ready for your criticism when I come up. I have wanted to talk over some of the e details more fully with you and hope that we won't miss out this time. If you are tied up next week let me know as soon as possible and I will rearrange my program so as to suit yours if possible.

I saw Blockman yesterday and he tells me that Over has gone out of business , also Ryan he believes. Watson says that they are getting a along peacefully with the handpickers at the present time. Blockman bears the statementout. There are a couple of new men that are start-

ing in. One is a colored man and another a white man. I don't know just where they are locat d yet. There are a few beachcombers working near Bird rock but I wish that we could get a bunch of them to working. That would be a means of satisfying the good people of Redondo.

I am getting a lot of fine work out of this man Brandt and I think that he is going to be able to give us some valuable assistance in getting at the control of the kelp. I am getting more confident every day that I see him work. He is not a prepossessing man in apearance but he seems to have the requisite scientific training to handle our job right. I really think that I may become quite a botanist under his tutelage.

Hoping that we may soon get together, I am

Sincerely yours

COMMISSIONERS
F. M. NEWBERT
M. J. CONNELL
E. L. BOSQUI

EXECUTIVE OFFICER
CARL WESTERFELD

FISH AND GAME COMMISSION
OF CALIFORNIA

SAN FRANCISCO Oct. 15, 1917.

Mr. W. C. Crandall,
Scripps Institution,
La Jolla, California.

Dear Mr. Crandall:-

We are sending you enclosed a copy of a letter from Mr. H. A. Campbell of the California Chemical Company in which he has more or less to say about the opening of kelp beds south of Summerland.

We have sent a copy of this letter to Mr. Nidever also that you may both know at least what Mr. Campbell thinks. We have written Mr. Campbell that the closing and opening of the beds is up to you and Mr. Nidever.

Yours very truly,

N. B. Scofield

COMMERCIAL FISHERIES DEPARTMENT

NBS:GC

C O P Y

CALIFORNIA CHEMICAL COMPANY
905 Syndicate Bldg.,
Oakland, California.

October 13th, 1917.

California Fish and Game Commission,
New Call Bldg.,
San Francisco, California.

Gentlemen:-

I had a look over the kelp situation fro m Summerland south to Ventura yesterday. I have been observing for the last few days the wonderful growth of the new kelp from the beds which recently went out.

It is my opinion that within a few days we should be able to harvest kelp off Summerland wharf, off Summerland point, a mile south of Summerland and off Sandy Point, four miles south of Summerland.

In view of the face that we are now barging our kelp from points north of Gaviota to as far noth as Conception, a distance of from 30 to 45 miles, we are particularly anxious to get into the beds south of Summerland, which are nearer by our plants.

Personally, I am of the opinion that the beds in front of Summerland and immediately south will have advanced in growth within a week or ten days to a point where cutting would be profitable and un-injurious to the growing kelp.

I am writing you requesting that you open these beds, which are now withdrawn, to us at the earliest possible date.

Thanking you in advance for a reply.

I remain,

Yours truly,

H. A. Campbell, Gen. Mgr.,

HAC:W CALIFORNIA CHEMICAL COMPANY

Copy GC

THE LORNED MANUFACTURING COMPANY
INCORPORATED

G. W. SIMMONS, PRESIDENT
L. H. THOMPSON, VICE-PRESIDENT
A. H. BRYANT, VICE-PRESIDENT
L. S. HASLAM, TREASURER
EDW. J. PORTEOUS, ASST. TREASURER
GEO. B. HARRIS, SECRETARY

MAKERS OF
POTASH AND FERTILIZERS

1724 WHITEHALL BUILDING
NEW YORK CITY
910 SPRUCE STREET
ST. LOUIS
FACTORY AT
LONG BEACH, CAL.
FACTORY AT
SUMMERLAND, CAL.

Summerland, Calif.,
October 26, 1917.

Capt. W. C. Crandall,
c/o Scripps Institute,
La Jolla, California.

Dear Captain Crandall:

I have been going over the Kelp situation in Santa Barbara channel very carefully since you left with our Captain Child, who has carefully examined every mile of Kelp bed from Carpinteria to Point Conception in the last few weeks. We have been doing all of our harvesting in the Point Conception beds for the last month, so that Child has had an opportunity to make daily observations of the growth of the beds from Point Conception to our wharf.

In view of the experience with these beds and the season of the year and the local conditions, we wish to recommend the following:

(1) That the beds from Naples to Santa Barbara light (that is from long. 119°58' to long. 119°43') be continued as closed beds until December 15th. I find by the notice dated September 4th, 1917, that these beds were all closed at that time. It will take until December 15th in our judgment until these beds are in proper condition to cut and produce a fair amount of kelp; and if they are cut sooner than that, there will inevitably be a substantial sacrifice in the volume of production.

(2) That the beds from Summerland to Carpinteria (that is from long. 119°36' to long. 119° 32'), which were closed by decree of September 4th, 1917, be continued closed until April 1st, 1918. The same conditions as mentioned above apply to this bed, but a still greater consideration is the fact that these beds are of importance to us as protection against bad weather from the south-east. If any portion of these beds are opened, we believe that they will be cut away at just the time of the year when they are most needed for whatever protection they are worth; and protection of every sort we can get for our wharves, boats and moorings in this open roadstead during the winter season is of great importance.

 October 26, 1917.

Inasmuch as the only people that would logically be benefited by opening these beds are located here where they will get the protection from the beds by keeping them closed, this suggestion, if carried out, would not work a hardship on anybody, but is a far-sighted and "safety first" thing to do in our judgment.

Dr. Turrentine of the Government plant has gone over this matter with us, and believes also that this is the proper thing to do.

If this coincides with your judgment in the matter, won't you so recommend to the Fish and Game Commission and advise us?

Very truly yours,

H. B. Thompson

Vice-President.

LHT*ELB

Oct.29th 1917

L.H.Thompson,

Santa Barbara,Cal.

My dear Mr.Thompson:

Your letter of the 26th is at hand. Regarding the closing or opening of the beds in and about Santa Barbara, there were two sets of beds closed namely

a, A group opposite Miramar and Santa Barbara that by common consent it was thought should be set aside as permanebtly closed until such time as the general public should be swung into line to see that cutting would be a good thing.

b. Another series set aside for the experimental work of the Bureau of Soils which again by common consent was thought the best thing to do.

As matters now stand then all beds authorized as closed beds to commercial companies are closed until such future time as the citizens are satisfied with the cutting of the beds off Santa Barbara and at such a time as the Federal Plant has completed its work or finds that it has more kelp than is necessary for the performance of its experiments.

Regarding the closing of other beds from Santa Barbara to Pt.Conception exclusive of the beds set aside for the Government, I am in accord with the observations of Capt.Child. However if you and the California Chemical Co. can come to some agreement about mutually staying off the beds in a manner that is agreeable to the Fish and Game Commission, it will save you the trouble of having the red tape about your beds as I hardly believe other companies can go as far as your fields for kelp.

protection you can get. Would it not be possible for you to make out a tentative schedule of the manner that you think the beds should be cut in and the manner that you would like them closed and I will go over this if necessary, and try to work out a satisfactory arrangement. I have just been working out such a schedule for the local companies and those about Long Beach. I am not so well acquainted with your region and should like more complete suggestions than contained in your letter.

I got my sweater on my way down but thanks for the offer to forward.

We are still finding the spores galore hereabouts.

Yours truly

W. C. Crandall

H.B. Nidever
518 - W 6th.
Long Beach.

Thompson reports ~~[illegible]~~ of Calif. Chem. Co. cutting in closed beds x —

W.C. Crandall

THE LORNED MANUFACTURING COMPANY
INCORPORATED

G. W. SIMMONS, PRESIDENT
L. H. THOMPSON, VICE-PRESIDENT
A. H. BRYANT, VICE-PRESIDENT
L. S. HASLAM, TREASURER
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GEO. B. HARRIS, SECRETARY

MAKERS OF
POTASH AND FERTILIZERS

1724 WHITEHALL BUILDING
NEW YORK CITY
910 SPRUCE STREET
ST. LOUIS
FACTORY AT
LONG BEACH, CAL.
FACTORY AT
SUMMERLAND, CAL.

Summerland, Calif.,
October 29, 1917.

Capt. W. C. Crandall,
c/o Scripps Institute,
La Jolla, California.

Dear Capt. Crandall:

Yesterday and the day before the California Chemical Company was cutting in the beds commonly known as the Summerland-Carpinteria beds. This morning I went to see Mr. Campbell, Manager of the California Chemical Company about this. He stated to me that his position was that there were no closed beds, but the Fish and Game Commission had not closed beds, and did not have the power to close them, and that you admitted to him that that was the case. He further stated that you had advised him that it would be to the best interests of the Kelp people to observe the decrees of the Fish and Game Commission, but as a matter of fact the Commission had no power to close beds.

All last winter and spring I looked forward to the time when we could have a State law that would govern these things, so that there would not have to be bolstering up of "Gentlemen's Agreements" which had no real authority behind them. We have a written order of the Board of Fish and Game Commissioners, State of California, with the facsimile signatures of the Commissioners rubber-stamped and the notice signed by H. B. Nidever, Assistant Fish and Game Commissioner, closing all of these beds. Does not such a notice constitute the official closing of the Kelp beds? If this notice is not the official closing of these beds, what formality has to be gone through to close the beds? Mr. Campbell admitted that he had a similar notification, but didn't pay any attention to it and that he planned to harvest kelp where it seemed to him to the best interests of the California Chemical Company to do so. I asked him if he were paying royalty, and he said he was. I told him that I couldn't see how a Commission had a right to collect royalty on something that it didn't control. He hadn't thought of that, but insisted that the control of the Kelp lay solely in the Federal Government, and that he was not going to pay any attention to the decrees of the Fish and Game Commission, and Captain Crandall had told him that he didn't have to.

W. C. C.--2 October 29, 1917.

We have been going from forty to fifty miles for our Kelp, and have several times shut down our plant because we couldn't make that trip in time to keep Kelp in our bin. We expect to continue to do that, and to stand by you and the Fish and Game Commission just as we have since this Kelp law was first drawn up as a bill--but we expect others to be kept in line and required to do the same. Will you please let me know what the situation is?

Very truly yours,

H. L. Thompson

Vice-President.

LHT*ELB

Oct.29th 1917.

H.B.Nidever,

Long Beach,Cal.

My dear Nidever:

Just to let you know how things are going and my present plans so that you may make yours in accordance if MrlScofield comes down this way as I shall be very anxious to take up some of the kelp details with you and him. I expect to send out a lateral boat trip next Sunday for the week Nov. 4th to Nov. 11th and I expect to be in Riverside during the same period.

This week I am getting out the maps as per agreement and the trial one is quite a success. I should like to have y u here to go over the maps though so that any details or general features might be arranged so as to complete the work. I took Watson over to see the trial map today and he was much pleased with the appearance and the working possibilities of the maps.

I very much hope that you and Scofield will show up within a day or so and also that you can get Thom son to make the trip with you. I have no wish to butt into his game and have tried to get him to utilize the material that we got through our general work this summer which is available for his use and certainly is worth a trip to get. If he is not going to use some of it, then he cannot blame anyone but himself if he finds some of the edges of his work appearing from other than his sources. Personalities certainly have no place in the present crisis and I hope he will get right with the work.

Hoping to see you this week, I am

Yours sincerely
W. C. Randall

Oct.29th 1917.

H.B.Nidever,

Long Beach,Cal.

My dear Nidever:

Enclosed ind a letter from L.H.Thompson. These are the men that you saw, I believe and I doubt the necessity for any drastic action.

When you come down can you bring me a copy of the Sept 4th closing as wel as the later one so that my file may be complete. I gave Scofield my copy for the S.F.Office.

Also should like copy of the "Fish and Game Laws" and "Closing Cards"

Yours sincerely

M C Crandall

Oct.31st 1917.

L.H.Thompson,

Summerland,Cal.

Dear Mr.Thompson:

Your letter of the 29th is an eye opener. If your understanding of what Mr.Campbell said is absolutely correct, I certainly have been either willfully misquoted or else woefully misunderstood. I saw and talked over Santa Barbara beds with Mr.Campbell. I told him that certain beds near Summerland were closed for the Government use. I absolutely never intimated nor could possibly have given the impression that the State and Fish Commission had no jurisdiction. They are in full power but I was in hopes that we could have an understanding whereby all the red tapemight be eliminated. However I shall now proceed to get busy with a closing order which I will at once take up with Mr.Nidever.

No one has a right to cut any of the Santa Barbara beds and no one a right to cut or harvest beds set aside for the Federal Government. The body that has set these beds aside is the Fish and Game Commission who have full power to take away all licenses for a period of not more than a year of any doing so. Also there is a fine clause in the same connection.

Confirmation telegram.

Ask Turrentine to check up closing order on chart as per letter of twenty ninth to you. You wire Nidever #518 W 6th St., Long B Beach. Fish and Game Commission have full jurisdiction. I have been misquoted.

Yours truly

W C Crandall

Mr.L.H.Thom son,

Summerland,Cal.

My dear Mr.Thompson:

At present the kelp beds are closed except for the cutting that Dr. Turrentine may do in his allotments from 119 35'which is nearly a mile below Summerland and so far as I can see gives you all the protection that you ask for for your plants. However if thoughtbest would not another miles closing namely to 34' amply protect you.

I understand that the Cal.Chem.Co. is apt to change hands and trust if you hear anything concerning the same that you will advise me.

As soon as things get stable up your way and you have arrived at some definite conclusions, I shall try to come up a d check up with you.

Yours sincerely

THE LORNED MANUFACTURING COMPANY
INCORPORATED

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Summerland, Calif.,
October 31, 1917.

Capt. W. C. Crandall,
c/o Scripps Institute,
La Jolla, California.

Dear Capt. Crandall:

I have your letter of the 29th and your telegram of today.

In reply to the latter first, Dr. Turrentine has been in my office and checked over the closing orders of September 4th and October 9th with me. On the former, one line states: "All Kelp Beds along the mainland between long. 119° 35' and 119° 37',and 118° 42' and 119° 43', etc." I have been taking this to mean all the beds from 118° 42', which is the other side of Point Dume, and 119° 43', which is the Santa Barbara light--in other words, all the mainland beds from the Santa Barbara light east. It looks now as though this were a misprint and as though the 118°42' was intended for 119° 42'. In that case the Carpinteria beds are not included in this notice of closure, although Mr. Campbell thinks they are.

Under these circumstances I do not feel like writing Mr. Nidever until I find out from you if the closing order I have is a misprint or not.

Porteous has practically finished his work at Long Beach, and is here now; and I am going to turn over to him the scientific end of the work here, including the observation of kelp growth and other conditions that effect the kelp growth, and the proper rotation in which to cut the beds. I am very much interested in your plan of mapping out as far as possible a uniform schedule as to seasons in which certain beds are to be cut to produce the greatest available Kelp supply, and I will ask Porteous to make out such a schedule in outline of the beds Rincon to Conception, and send it to you for your consideration. We are as anxious to have such a schedule in operation here as anywhere else because, although the kelp looks in healthy times to be inexhaustible, we know from expensive experience that the biggest kelp bed can disappear in a month under adverse conditions. We will write you a little later just such suggestions for this schedule as seem best from this view-point. In the meantime, will you please let me know if the closing order which I have is a misprint as to 118° 42'?

W.C.C.--2 October 31, 1917.

Thanks very much for the copy of Assembly Bill #73, which has served its purpose, and which I return herewith.

With kind regards,

Very truly yours,

L H Thompson

Vice-President.

LHT*ELB

HER. 355

ALL QUOTATIONS SUBJECT TO CHANGE WITHOUT NOTICE

CABLE ADDRESS "HERPOCO"

HERCULES POWDER CO.

CHICAGO, ILL.
DENVER, COL.
HAZLETON, PA.
PITTSBURG, KAN.
JOPLIN, MO.
NEW YORK, N.Y.
PITTSBURGH, PA.
SALT LAKE CITY, UTAH
SAN FRANCISCO, CAL.
ST. LOUIS, MO.
WILMINGTON, DEL.
MEMPHIS, TENN.

MANUFACTURERS OF EXPLOSIVES

DYNAMITE
GELATIN DYNAMITE
BLASTING GELATIN
PERMISSIBLE POWDERS
BLASTING SUPPLIES
BLASTING POWDER
BLACK SPORTING POWDERS
SMOKELESS SHOTGUN POWDERS
SMOKELESS RIFLE POWDERS

San Diego, Cal.,
Oct. 31st, 1917.

Capt. W. C. Crandall,
The Scripps Institution
for Biological Research,
La Jolla, California.

My dear Captain:

Since our conversation of the other evening Captain Morris and I have consulted with our captains and have drawn up a tentative schedule for kelp operations during the next year. This is as follows:

Beds from Pt. Loma to San Juan to be closed November 12th of this year and opened January 1st. Finish cutting at San Juan March 1st; start cutting at San Clemente, March 1st, finish San Clemente, April 15th. Santa Barbara, April 15th to 25th., Pt. Loma, May 1st to 15th; finish San Juan June 10th; San Clemente July 30th; Santa Barbara, July 30th to August 13th; San Nicholas, August 13th to September 15th; then back to Pt. Loma.

This schedule is arranged according to operations during the past year and we think fulfills your idea of so arranging our schedule as to best meet weather conditions and also to avoid cutting kelp along the coast during the summer season.

This schedule is slightly different from what we proposed the other night and if adopted will necessitate closing at Pt. Loma about Nov. 12th instead of January 1st, as was proposed.

All of our captains are agreed that it is safer to cut along the coast during January and February than it will be at San Clemente during that period.

We are sending a copy of this letter to Captain Watson who we believe is also in accord with this schedule. Unless we hear from you to the contrary we will as soon as we finish coast beds, start cutting at San Clemente.

Very truly yours,

HERCULES POWDER COMPANY,

Per. L. M. Bates
Manager.

LNB-HW
Copy to Capt. Watson.
" " " Morris

SAFETY FIRST—USE PERMISSIBLE EXPLOSIVES THAT DO NOT REQUIRE THAWING

THE LORNED MANUFACTURING COMPANY
INCORPORATED

MAKERS OF
POTASH AND FERTILIZERS

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910 SPRUCE STREET
ST. LOUIS
FACTORY AT
LONG BEACH, CAL.
FACTORY AT
SUMMERLAND, CAL.

Ennis
Sardines
Gent

Summerland, Calif.,
November 1, 1917.

Capt. C. W. Crandall,
c/o Scripps Institute,
La Jolla, California.

Dear Capt. Crandall:

I have yours of the 31st ultimo. There is no doubt about Mr. Campbell's statements to me, but I can understand how he might have misunderstood your statements regarding the closing of beds because Dr. Turrentine misunderstood them somewhat in the same way. In other words they received the Commission's notices, which they misunderstood to be a closing of the Summerland and Santa Barbara beds. Then when you told Mr. Campbell that certain beds were closed for the Government use and that for the rest you hoped the operators would find it to their interest to conserve by general agreement, he assumed that there actually existed no authority to close beds except for or by the Federal Government.

I think Mr. Campbell wants to do the right thing, but he is having a very hard time and his plant is shut down more than three quarters of the time. He is in a worse position than Mr. Crouch was with his plant, and I have had so much experience with that sort of thing since I have been in the Kelp business that I know the only way to take care of Kelp beds is to have them closed and opened under proper legal authority on proper scientific and practical information regarding the growth, the season, etc.

As you say, there are so few of us here that this ought to be worked out without the red tape of formally closing the beds; and if the California Chemical Company had been more fortunate and things were going all right with them and they had more experience with Kelp, doubtless this could be done. Under the circumstances, however, it seems to me that you have done the wise thing in taking up with Mr. Nidever the formal closing of the beds that are so important to us, not only for their close supply of Kelp, but for their breakwater value during the storm season.

C.W.C.--2 November 1, 1917.

We want to render you competent assistance up here, and as I wrote you yesterday, Mr. Porteous will give as much time as is necessary to that work so that you can call on him at any time for data; and if necessary, he will make special observation trips for you or with you so that your rulings on these beds of the Santa Barbara channel may accomplish the most with the least amount of expense and time on the part of yourself and the Fish and Game Commission.

Very truly yours,

H. D. Thompson

Vice-President.

LHT*ELB

Nov. 2nd 1917

Lorned Manufacturing Co.,

Summerland Cal.

My dear Sir-rs: Attention Mr. Thompson:

The closing order was intended to close only the beds as shown in my letter of the 19th i.e. from Summerland to Santa Barbara Light and then s ome small beds for Tarrentine to the Notth and West.

Pt. Dume to Summerland were not intended to be closed beds and the order must have been a misprint. I have given my copy to the State Fish and Game Commission and so cannot check up what we put out.

Trusting that I may hear from you soon concerning the desired closing, I am

Sincerely yours

M. Crandall

Nov.5th 1917.

Mr.H.B.Nidever,

Long Beach,Cal.

My dear Mr.Nidever:

Your parcel containing the game laws received O.K. for which receive my thanks. I have placed them where they can easily be seen.

I was sorry not to see you down this way this week as the maps are at the printers and were to have been completed this morning but as usual these times they were short on paper and so the maps will not be out until next Saturday. I am having 20 sets made and I think the maps are going to make the work easier. How should the bills for the same be made out as I believe Mr.Scofield agrred that they would be paid for from the administrative. A draftsman worked 43 hrs. at .75 per hour or $32.25. The priniting is to be 30 c for each negative, and 20c for each copy. There are 10 negatives so the negatives will be $3.00 and the copies $40.00 or the whole job $75.25.

The local beds willbe harvested by the 15th of this month and I suggest that the Point Loma, La Jolla and beds to San Juan Point be closed from November the 15th until January the 1st. I went over these beds Saturday and believe that such an order will give the best results.

I hope to get up to see the Pt.Fermin beds next week as I am in hopes the beds will hold out longer than they White's Pt.Bed. However I believe that it will be well to put a closing notice on from the 1st of Dec. and reopen the Redondo bed at that time. I have a schedule figured out that I want to go over with you in this connection.

Thompson of Lorned Inf. is worried about the beds near Summerland as they want the beds kept closed near thier plants during the winter season. He also asked for a closure until Dec.15th from Naples to Pt.Santa Barbara.

I do not believe this is wise but a closure might be placed as asked from Carpenteria.
Goleta Pt. ~~to 1 mile below Summerland~~. Then not open Summerland last mile until after the winters storms are passed. This would leave open Rincon Pt. and Ventu ra beds and everything north and west of Goleta. However I should like to talk this matter over with you in detail after the new m ps are avail able.

I will be back Friday night and have the maps Saturday and then will ry and get ahold of you.at once.

Yours sincerely

D C Crandall

La Jolla Cal.

Mar.24th 1917.

G.Tarbox,

San Francisco,Cal.

Dear Sir:

The follwoing kelp plants would be available for a supply of KCl.

Hercules Powder Co.	Chula Vista	300 tons per month.
Swift Co.	San Diego	100 " " ".
Southern Reduction Co.	Roseville	20 tons " ".
Lorned Mnf.Co	Longbeach	50 " " ".
Sea Products Co.	"	25 " " ".
Oceanic Engineering Co.	"	25 " " ".
Pac.Products Co.		25 " " " .
National Kelp Potash Co. Fertilizer and Potash Co.		10 " " ".
Diamond Match Co	Wilmington	50 " " ".

out June 7, 1917

Burned out May 1, 1917

Of these Hercules and Diamond Match have the salt while the others have simply dried kelp that would have to be worked up for the salt.

At Summerland there are three plants under construction

Fedral Govt.

Lorned Maf.Co.

California Chemical Co.

Yours truly

W.C.Crandall

U.S. Potash + Fert. Co. — Closed — Oppenheimer potash from centaurs

U

Statement of the Growth of the Tuna Packing Industry.

Date	Operating	Investment	No. people.	Boats.	Value Output.
1910	1	$ 10 000	30		$ 70 000
1911	3	50 000	100		250 000
1912	5	200 000	400		750 000
1913	9	650 000	1100		1 250 000
1914	12	1 350 000	1600		1 600 000
1915	15	1 900 000	2200		1 900 000
1916	17	2 250 000	2700	400	2 500 000

Statement of the Growth of the Kelp Industry.

1911					
1912	1	10 000	10	1	1 000
1913	1	-- ---	10	-	- ---
1914	1	50 000	50	2	- ---
1915	2	100 000	75	2	60 000
1916	8	3 000 000	1200	11	6 000 000
1917					

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FACTORY AT
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FACTORY AT
SUMMERLAND, CAL.

Summerland, Calif.,
November 6, 1917.

Capt. W. C. Crandall,
c/o Scripps Institute,
La Jolla, California.

Dear Captain Crandall:

I have yours of the 2nd instant, and am glad to have this information, which enables me to understand the closing order of September 4, 1917.

Porteous is just getting settled in his laboratory, so he can go to work on this kelp schedule--you know Mr. Porteous can't really work unless he is completely surrounded by bottles and jars and things like all the rest of you scientific fellows. If it is agreeable to you, I suggest that you let the question of further closing orders on these beds hold over until we can work up a definite recommendation as to seasons of cutting in certain locations of Santa Barbara channel beds, which we will do as soon as possible.

With kind regards,

Very truly yours,

H. L. Thompson

Vice-President.

LHT*ELB

THE SCRIPPS INSTITUTION FOR BIOLOGICAL RESEARCH
OF THE
UNIVERSITY OF CALIFORNIA

LOCATED AT LA JOLLA
NEAR
SAN DIEGO, CALIFORNIA

LA JOLLA, CALIFORNIA,

Nov.22nd 1917.

California State Fish and Game Commission

San Francisco,Call

Dear Sirs:

Enclosed find two bills incurred in making kelp maps for the use in opening and closing of the kelp beds. These maps were made after conference with Mr.Scofield and Mr.Nidever and have all been delivered to Mr. Nidever. The bill for wages, I paid directly from Scripps Institution Revolving Fund as Mr.Whitman needed the money. This was paid by my check # 3341.as will show on the Univ. of Cal. files.

Yours truly

Business Manager.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

CCF-CLM.

INVESTIGATION OF FERTILIZER RESOURCES.

November twenty-seven,
1917.

Capt. W. C. Crandall,
Scripps Institute of Biological Research,
La Jolla, California.

Dear Sir:-

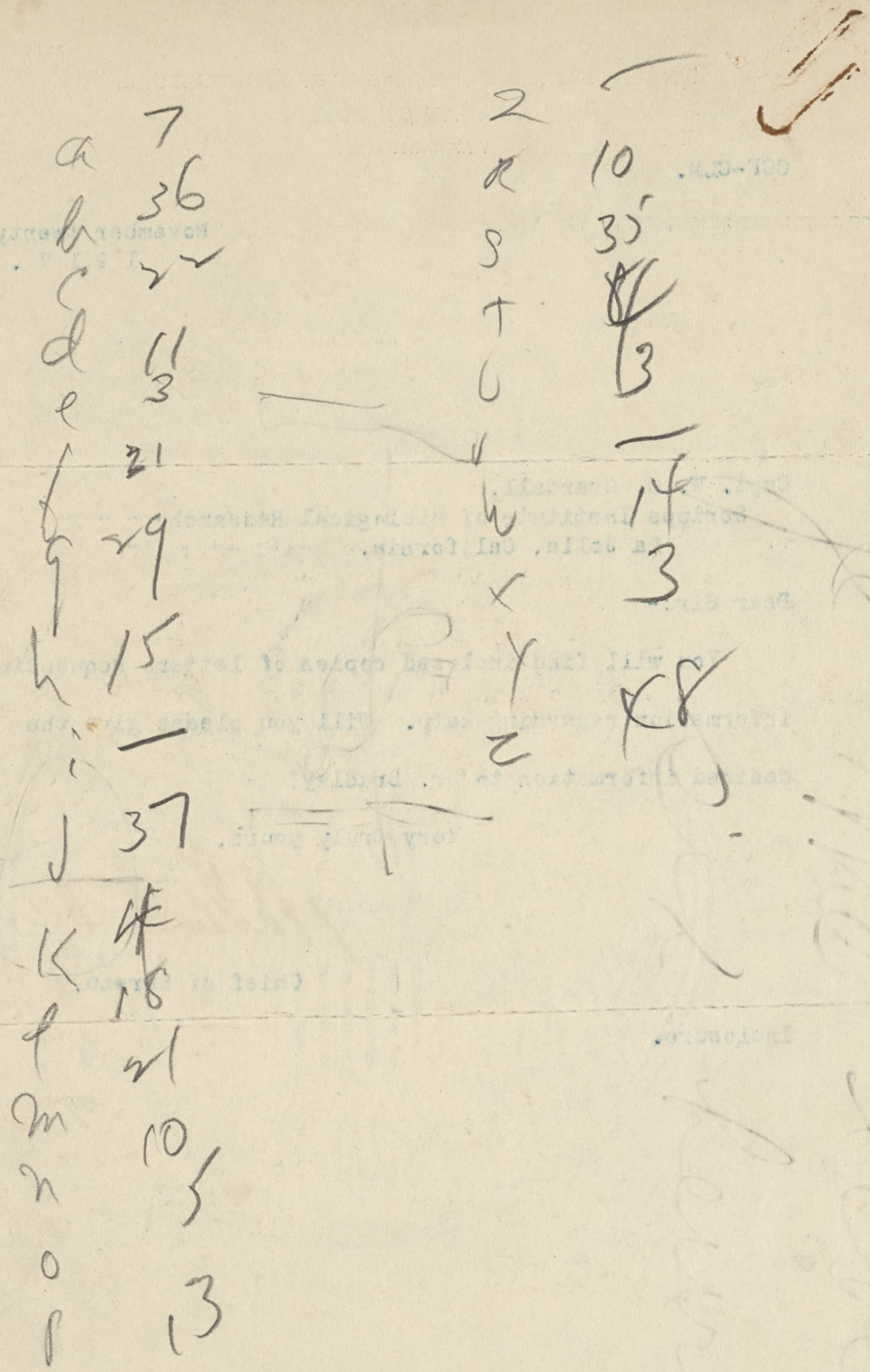
You will find inclosed copies of letters requesting information regarding kelp. Will you please give the desired information to Mr. Bradley?

Very truly yours,

Milton Whitney

Chief of Bureau.

Inclosure.



COPY.

FRANK K. CAMERON

Salt Lake City, Utah. Nov. 20, 1917.

Chief of Bureau of Soils,

Washington, D. C.

Dear Sir:-

I am enclosing herewith a letter which is self-explanatory.

I have written Mr. Bradley of this disposition of his letter.

Yours very truly,

(Signed) Frank K. Cameron.

FCK OH

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

INVESTIGATION OF FERTILIZER RESOURCES.

Nov.28th 1917

Chief,Bureau of Soils,

Washington,D.C.

Dear Sir:

Since wrtting you on Oct.11th concerning the kelp beds along the coast of California, I have visited all the beds between here and Redondo twice. The serious condition of the beds has disappeared and all the beds now show a normal condition. The black rot that was present has disappeared and the presence of much red water is rapidly disappearing. Dr.Brandt, the State Botanist has examined the kelp carefully for spores and has found great quantities that lead him to believe that the sinking of the kelp was due largely tothe fruiting and not to either rot or red water. He believes that the flotation power of the plant has been lessened by the fruiting season and thus thesinking of the plants.

The control of the beds this fall has been as follows:

Point Loma Beds closed until Oct.1 Open until Nov. 15 Closed till Jan. 1st.

Same is true of all beds as far north as San Juan Capistrano Point.

This closing has been satisfactory and the quantities harvested have been up to standard.

Point Fermin	Closed	until	Nov. 1	open	until	Dec.1	Closed	until Feb.1
Whites Point	"	"	Oct.1	"	"	Nov.1	"	" Jan.1
Redondo	"	"	Sept,1	"	"	Oct.1	"	" Dec.1

Last Sunday I checked over the last three beds and found that the beds show the present system to be working out well so far as these beds are concerned. The crop is not large enough however to take care of the

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

INVESTIGATION OF FERTILIZER RESOURCES.

three companies that are working there. They find it necessary to go to Point Dume and some the islands inorder to get a sufficient quantity. The amount harvested is about the same in quantity as has been harvested from the same beds before so that conditions seem to be normal.

Longer resting periods are given to the Point Loma- San Juan beds and their output is entirely up to normal. The companies working here go to San~~ta~~- Clemente for their extra supply at this time of year.

The State Fish and Game Commission has issued a new set of maps renumbering the beds in order that the former set of duplications might be removed and also given each a name:

Tia Juana	#1	32	32[illegible]		32	37'	
San Diego Bay	2	32	37'		SW 1/2 W Pt.Loma Lgt.		
Point Loma	3	Sw 1/2 W			32	47'	
La Jolla	4	32	47'		32	52'	
Del Mar	5	32	55'		33	00'	
Encinitas	6	33	00'		33	10'	
Oceanside	7	33	10'		33	22'	
Mateo	8	33	22'				
San Juan	9	33	26'		33	29'	
Laguna	10	33	29'		33	35'	
San Pedro	11	San Pedro Lgt			Pt.Fermi n Lgt thru Whistler		
Pt.Fermin	12	Pt.Fermin Lgt.			33	42'	
White's Pt.	13	33	42'		33	44'	
Redondo	14	33	44'		33	50'	
Santa Monica	15	118	27'		118	41'	
Pt.Dume	16	118	41'		118	48'	30"
Mugu	17	118	48'	30"	119	04'	
Ventura	18	119	16'		119	23'	30"
Gorda	19	119	23'	30"	119	30'	
Carpenteria	20	119	30'		119	35'	
Summerland	21	119	35'		119	37'	Federal Reserve
Santa Barbara	22	119	37'		119	42'	Santa Barbara Reserve
S.B.T.F.	23	119	42'		119	43'	Fedral Reserve
----------	24	119	43'		119	48'	
More's	25	119	48'		119	49'	Federal Reserve
Goleta	26	119	49'		119	52'	
Coal Oil Pt.	27	119	52'		119	53'	Federal Reserve
Naples	28	119	53'		119	58'	
Capitan	29	119	58'		120	04'	
Gaviota	30	120	04'		120		

151

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

INVESTIGATION OF FERTILIZER RESOURCES. #3.

Conception	31	120 15' 120 28'
San Miguel	32	All beds about San Miguel
Brockway	33	Sandy Pt. North side to 120 06'
Bee	34	" " South " 120 06'
Beecher's	35	120 06' East End Is.
Diablo	36	Frazier Pt.N to 34 02'
Gull	37	Frazier Pt.S to 119 45'
Shaws	38	Beds from Alamos Anch--E-- San Pedro Pt.
Anacapa	39	All besd about Anacapa
Santa Barbara Is	40	" " " Santa Barbara Is..
St.Nicolas	41	" " " St.Nicolas Is.
Catalina	42	" " " Catalina
Castle Rock.	43	NW harbor around to 32 57'
Seal Rock	44	32 57' to China Pt.
Smuggler's	45	China Pt. 118 21'.

All beds hereafter will be referred to by name and number.

A general review of the beds in company with Dr.Brandt will probavly be made during the middle of Dec. to see whether the beds re still fruiting at that time.

Last week I had the pleasure of again showing Dr.E.D.Clark about he sardine canneries of San Diego.

Yours truly

COMMISSIONERS
F. M. NEWBERT
M. J. CONNELL
E. L. BOSQUI

EXECUTIVE OFFICER
CARL WESTERFELD

FISH AND GAME COMMISSION
OF CALIFORNIA

SAN FRANCISCO November 30,1917.

Mr. W. C. Crandall,
La Jolla, California.

Dear Mr. Crandall:-

In the matter of the blueprint maps of the kelp beds, it appears now that we should have taken up this matter with the Board of Control before proceeding but I think the bills will be passed if we write them a letter of explanation.

In regard to Mr. Russell Whitman's bill, our clerk tells me that it would be better to put it in as "emergency employment", and in order to do this it will be necessary for him or for you to fill out the enclosed Declaration of Citizenship. You can sign as the appointing officer, which with his signature and the signatures of two witnesses, will be sufficient.

I am just now in a rush to get off on the three o'clock train for Monterey and am, therefore, making this letter brief. I expect to be down in Southern California in the near future and will make it a point to see you then.

Very truly yours,

N. B. Scofield In Charge.
DEPARTMENT OF COMMERCIAL FISHERIES
G.C.

NBS:GC

Dec.3rd 1917.

Mr.N.B.Scofield,

San Francisco,Cal.

My dear Mr.Scofield:

Your note of the 30th is at hand. Enclosed find the Declaration for Mr.Whitman.

I am having my troubles down here also only on another score. Hercules and Swift ahve been cutting over at St.Nicolas and had expected to begin at Clemente this month. In the meantime the people at Long Beach and San Pedro have slipped over and cut them out. Result no kelp and all beds closed hereabouts. Bent, Watson and I are leaving this afternoon to see what we can find and try and straighten out a difficult situation. I hope we won't have to put closing orders on the islands as well as the coast but that is what it may come to in order that peace may be kelp amongst the harvestors. I am in hopes that it is the fruting season on the islands and that this is the cause of the sinking and not another company cutting out.
cutting

Yours

W.C.Crandall

COMMISSIONERS
F. M. NEWBERT
M. J. CONNELL
E. L. BOSQUI

EXECUTIVE OFFICER
CARL WESTERFELD

FISH AND GAME COMMISSION
OF CALIFORNIA

SAN FRANCISCO Dec. 4, 1917.

Mr. W. C. Crandall,
La Jolla, California.

Dear Mr. Crandall:-

Can you, without too much trouble, get us an estimated total of the quantity of kelp that will have been harvested in California for the year 1917? Also an estimate of the quantity of different kelp products turned out. The Pacific Fisherman would like this for their Year Book which they will get out about the first of January.

We have a good many requests for information on the kelp industry and we wish we had an up-to-date, popular account of this interesting industry. You are the proper one to get this out and we would like very much, if you could find time for it, to write up such an account for publication in our "California Fish and Game".

Very truly yours,

N. B. Scofield In Charge
DEPARTMENT OF COMMERCIAL FISHERIES

NBS:GC

Dec.6th 1917.

N.B.Scofield,

San Francisco,Cal.

My dear Mr.Scofield:

Your letter of the 4th is at hand. I will send you the data called for within a couple of days.

During January I can send a paper on the kelp industry but I am full to the hilt this month. I was handed a couple of lemons in this Year Book also and I find it has taken a lot more time than I had anticipated.

Trusting that I amy see you soon, I am

Yours truly

Business Manager.

The amount of potash obtained from kelp is at present supplying only approximately one-eighth of the demand, or 18,000 tons per year, so that the market price for high grade potash has been raised from about $50 per ton to about $400 per ton. Practically all of the kelp not harvested is used either directly as fertilizer or its salts are extracted and made into balanced fertilizer.

Dec.6th 1917.

Mr.H.B.Nidever,

Long Beach,Cal.

My dear Mr.Nidever:

The closing notices came today. The follwoing errors occur namely Bed #29 reads 134 26' to 134 28' should be 34 26'N 34 28N

All f bed #3 should have been 3 to 10 inclusive until Jan. 3rd. This later mistake is really vital as the beds might be cut in the northern part before it is time for them.

At present there is considerable ill feeling amongst the different kelp manufacturers on account of the breaking over from their gentlemen's agreement. I had some very insistent calls over the telephone the first of the week from Hercules and Swift and the Handpickers. The handpicers and Swifts I straightened out in short order. The Hercules- Swift complaints about the Long Beach"Wilmington people is not so easy. It is not an official piece of work anuhow but if the situation can be eased down it may make future work easier. The agreement was that these people should have Clemente, a chance at Santa Barbara anf everything south of Long Beach. Locally they worked out a schedule accordingly. When they came to go north this last time, they found they had been practically cut out as far south as Mateo bed #8/ This made their season a little short on this end so they then pulled over to St Nicolas so as to save Clemente for as long a time as possible. When they got back there on the first, they found they had been anticipated again and the beds again cut. Also they got evidence from the lobster fishermen and so know that Diamond Match was there. As a result I went over to Clemete night before last and yesterday we spent on the beds. It is quite evident

that they were correct so far as the cutting was concerned but I think I did demonstrate a condition that has eased the situation up somewhat namely that there was occuring at this time a fruiting condition that is causing this kelp to sink at this time just as the kelp was sinking during the summer. In other words that Nature was at work. Everything points to this conclusion. It then would have been impossible for the Diamomd Match to have really made much impression on this bed under normal conditions but as it was they went and got the available small patches. Now as to what I suspect is going to happen. These people are going to move up an d take a cut out of Redonno just as a lessnn to the Long Beach people. They will not cut them out but just show them that two can play the same game and that agreements should be lived up to. They were in a mood to go to it hot and heavy until I made them see that Nature was mostly to blame. ~~Officially all~~ Legally all the companies have the same rights in all the open beds and we have no jurisdiction ov er them but if we can keep them at peace with one another it certainly will lessen the work connected with supervision. So don't be surprised one of these day to see a fleet going by. They will take about a 1000 tons and then go on but they are apt to throw a scare into the Long Beach people.

Trust the boat is getting nearly done and that you are seeing a let-up.

Yours truly

Scripps Inst.

No 2269

RODNEY STOKES COMPANY
INCORPORATED
858 THIRD STREET, FRYE & SMITH BUILDING
SAN DIEGO, CALIFORNIA

SAVE THIS

INVOICE

TO CHECK MONTHLY STATEMENT

SUNSET PHONE, MAIN 441 YOUR ORDER NO. _____ DATE Oct 26 19 17

DESCRIPTION	Originals	Negatives	Brown Lines	Blue Lines	Blue Prints	Feet	Rate	Amount
Kelp Map	1	1				3	10	30
				1		3	6⅔	20
								50

CHECKED BY _____
Form 1-11-'16-10M

NO BILLS RENDERED FOR LESS THAN TEN CENTS

TOTAL _____

Scripps Inst.

No 2313

RODNEY STOKES COMPANY
INCORPORATED
858 THIRD STREET. FRYE & SMITH BUILDING
SAN DIEGO, CALIFORNIA

SAVE THIS

INVOICE

TO CHECK MONTHLY STATEMENT

SUNSET PHONE, MAIN 441 YOUR ORDER NO. DATE Nov. 1 19 17

DESCRIPTION	Originals	Negatives	Brown Lines	Blue Lines	Blue Prints	Feet	Rate	Amount
Kelp Maps	9	9				27	10	2 70
				180		540	6⅝	35 10
								37.80
	1	1		20		60	6⅝	3.90
								41.70

CHECKED BY W.F.G.
Form 1-11-'16-10M

NO BILLS RENDERED FOR LESS THAN TEN CENTS

TOTAL 41.70

Calif Fish + Game Commission
New Case Bldg SF.

No 2691

RODNEY STOKES COMPANY
INCORPORATED
858 THIRD STREET, FRYE & SMITH BUILDING
SAN DIEGO, CALIFORNIA

SAVE THIS

INVOICE

TO CHECK MONTHLY STATEMENT

SUNSET PHONE, MAIN 441 YOUR ORDER NO. DATE Dec 27 19 1)

DESCRIPTION	Originals	Negatives	Brown Lines	Blue Lines	Blue Prints	Feet	Rate	Amount
Kelp bed Maps	10			150		405	6[5]	26 32

CHECKED BY Milw

Form 1-11-'16-10M

NO BILLS RENDERED FOR LESS THAN TEN CENTS

TOTAL

ARTHUR P. WILL
CHIEF OF BUREAU

State of California
LEGISLATIVE COUNSEL BUREAU

Sacramento December 7, 1916.

Scripps Institution for Biological Research,
La Jolla,
California.

Gentlemen:

I understand that you are making an investigation of the cutting of kelp. Can you give me the names of any counties that have adopted ordinances providing for the regulation of the industry? Any information you may be able to furnish will be greatly appreciated.

Very truly yours,

Arthur P. Will
Chief of Bureau.

FBW:G.

COPY FOR DR. W. C. CRANDALL.

San Diego, California,
December 8, 1917.

Aircraft Fireproofing Corporation,
120 Broadway, New York, N. Y.

Gentlemen:

Dr. W. C. Crandall of the Bureau of Soils has referred to us your letter of November 9th regarding the possibility of securing a supply of alginic acid, or its homologues, on the west coast.

We are today expressing you a two pound sample of sodium alginate. This material has only been partially dried and will run about 75% water and 25% sodium alginate.

Sodium alginate is one of the soluble salts of alginic acid. As you probably know, alginic acid itself is quite insoluble in water, and in order to make use of the adhesive and colloidal properties of this material, it is necessary to transform it into one of the soluble salts. Any information regarding the chemical or physical properties of this material we will be very glad to furnish you.

We suggest that you correspond with Mr. Geo. H. Markell of our main office at Wilmington, Delaware, who will be able to give you all information regarding the production and value of this material.

Very truly yours,

HERCULES POWDER COMPANY,

Per

LNB-MFD Manager.

Copy to
Dr. W. C. Crandall.

17

BOND
HAMMERMILL

Form 1217

CLASS OF SERVICE DESIRED	
Fast Day Message	
Day Letter	X
Night Message	
Night Letter	

Patrons should mark an X opposite the class of service desired; OTHERWISE THE TELEGRAM WILL BE TRANSMITTED AS A FAST DAY MESSAGE.

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

Receiver's No.
Check
Time Filed

Send the following telegram, subject to the terms on back hereof, which are hereby agreed to

Confirming wire

Oswego, N.Y., Dec.14,1917.

Mr W.C.Crandall,
Scribbs Biologic al Institution
La Jolla, California.

Hercules and Swift have cut and cleaned out all kelp at Redondo and now gone to Santa Monica evidently intending to clean up Coast past Point Dume.

Before State took control kelp beds we had some protection from County Board in Los Angeles County. Now we seem to have no protection. We consider cutting by Hercules and Swift in our territory most unfair and unjust. It is like cutting in our back yard. We understood State was going to protect companies in certain localities and restrict certain territories for local companies. Can this not be enforced ?

Please wire if you can do anything for us and if not to whom should we appeal.?

They have cleaned out kelp in our vicinity and practically shut us down. We consider this pretty rough treatment and have wired Markell accordingly.

Please wire at our expense your opinion and what you think can be done to get protection.

We believe kelp from Point Firmin to Point Mugu should be considered territory of Long Beach and San Pedro companies.

F.V.D.Cruser,
THE DIAMOND MATCH COMPANY

ALL TELEGRAMS TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS:

To guard against mistakes or delays, the sender of a telegram should order it REPEATED, that is, telegraphed back to the originating office for comparison. For this, one-half the unrepeated telegram rate is charged in addition. Unless otherwise indicated on its face, THIS IS AN UNREPEATED TELEGRAM AND PAID FOR AS SUCH, in consideration whereof it is agreed between the sender of the telegram and this Company as follows:

1. The Company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery, of any UNREPEATED telegram, beyond the amount received for sending the same; nor for mistakes or delays in the transmission or delivery, or for non-delivery, of any REPEATED telegram, beyond fifty times the sum received for sending the same, *unless specially valued;* nor in any case for delays arising from unavoidable interruption in the working of its lines: *nor for errors in cipher or obscure telegrams.*

2. In any event the Company shall not be liable for damages for any mistakes or delays in the transmission or delivery, or for the non-delivery, of this telegram, whether caused by the negligence of its servants or otherwise, beyond the sum of FIFTY DOLLARS, at which amount this telegram is hereby valued, unless a greater value is stated in writing hereon at the time the telegram is offered to the Company for transmission, and an additional sum paid or agreed to be paid based on such value equal to one-tenth of one per cent. thereof.

3. The Company is hereby made the agent of the sender, without liability, to forward this telegram over the lines of any other Company when necessary to reach its destination.

4. Telegrams will be delivered free within one-half mile of the Company's office in towns of 5,000 population or less, and within one mile of such office in other cities or towns. Beyond these limits the Company does not undertake to make delivery, but will, without liability, at the sender's request, as his agent and at his expense, endeavor to contract for him for such delivery at a reasonable price.

5. No responsibility attaches to this Company concerning telegrams until the same are accepted at one of its transmitting offices; and if a telegram is sent to such office by one of the Company's messengers, he acts for that purpose as the agent of the sender.

6. The Company will not be liable for damages or statutory penalties in any case where the claim is not presented in writing within sixty days after the telegram is filed with the Company for transmission.

7. *Special terms governing the transmission of messages under the classes of messages enumerated below shall apply to messages in each of such respective classes in addition to all the foregoing terms.*

8. *No employee of the Company is authorized to vary the foregoing.*

THE WESTERN UNION TELEGRAPH COMPANY
INCORPORATED
NEWCOMB CARLTON, PRESIDENT

CLASSES OF SERVICE

FAST DAY MESSAGES

A full-rate expedited service.

NIGHT MESSAGES

Accepted up to 2.00 A.M. at reduced rates to be sent during the night and delivered not earlier than the morning of the ensuing business day.

DAY LETTERS

A deferred day service at rates lower than the standard day message rates as follows: One and one-half times the standard Night Letter rate for the transmission of 50 words or less and one-fifth of the initial rate for each additional 10 words or less.

SPECIAL TERMS APPLYING TO DAY LETTERS:

In further consideration of the reduced rate for this special "Day Letter" service, the following special terms in addition to those enumerated above are hereby agreed to:

A. Day Letters may be forwarded by the Telegraph Company as a deferred service and the transmission and delivery of such Day Letters is, in all respects, subordinate to the priority of transmission and delivery of regular telegrams.

B. Day Letters shall be written in plain English. Code language is not permissible.

C. This Day Letter may be delivered by the Telegraph Company by telephoning the same to the addressee, and such delivery shall be a complete discharge of the obligation of the Telegraph Company to deliver.

D. This Day Letter is received subject to the express understanding and agreement that the Company does not undertake that a Day Letter shall be delivered on the day of its date absolutely and at all events; but that the Company's obligation in this respect is subject to the condition that there shall remain sufficient time for the transmission and delivery of such Day Letter on the day of its date during regular office hours, subject to the priority of the transmission of regular telegrams under the conditions named above.

No employee of the Company is authorized to vary the foregoing.

NIGHT LETTERS

Accepted up to 2.00 A.M. for delivery on the morning of the ensuing business day, at rates still lower than standard night message rates, as follows: The standard day rate for 10 words shall be charged for the transmission of 50 words or less, and one-fifth of such standard day rate for 10 words shall be charged for each additional 10 words or less.

SPECIAL TERMS APPLYING TO NIGHT LETTERS:

In further consideration of the reduced rate for this special "Night Letter" service, the following special terms in addition to those enumerated above are hereby agreed to:

A. Night Letters may at the option of the Telegraph Company be mailed at destination to the addressees, and the Company shall be deemed to have discharged its obligation in such cases with respect to delivery by mailing such Night Letters at destination, postage prepaid.

B. Night Letters shall be written in plain English. Code language is not permissible.

No employee of the Company is authorized to vary the foregoing.

THE DIAMOND MATCH CO.

OSWEGO. N. Y.

December 15,1917.

Subject: Kelp Harvesting.

Mr.W.C.Crandall,

Scribbs Biological Institution,

La Jolla,Calif.

Dear Mr.Crandall,

Under date of December 14th, I wired you as foblows:

"Hercules and Swift have cut and cleaned out all kelp at Redondo and now gone to Santa Monica evidently intending to clean up Coast past Point Dume.

"Before State took control kelp beds we had some protection from County Board in Los Angeles County. Now we seem to have no protection. We consider cutting by Hercules and Swift in our territory most unfair and unjust. It is like cutting in our back yard. We understood State was going to protect companies in certain localities and restrict certain territories for local companies. Can this not be enforced ?

"Please wire if you can do anything for us and if not, to whom should we appeal? They have cleaned out kelp in our vicinity and practically shut us down. We consider this pretty rough treatment and have wired Markell accordingly. Please wire at our expense your opinion and what you think can be done to get protection.

"We believe kelp from Point Firmin to Point Mugu should be considered territory of Long Beach and San Pedro companies."

Word was received from the Institute that you had already gone to Long Beach to investigate this matter, which was very good news for us, and I trust that long before this letter will have reached you, you will have been successful in obtaining some permanent protection for us.

It would seem to us that Companies located within a certain radius of certain kelp beds should have such beds for their exclusive cutting and I think that it was a most unjust act for either Hercules or Swift to come up all the way from San Diego and cut out the Redondo beds. Redondo and Firmin beds are closed and opened according to State regulations and they are closed and opened really for the benefit of the Companies located around San Pedro. It is most unjust for the Southern companies to come up and clean out all our kelp and shut our plants down in order that they can keep running themselves after beds in their vicinity have become exhausted.

I certainly will appreciate anything that you can do for us, as I know that you are disinterested and will see that justice is done to all concerned. I am sorry that we have had to call upon you for help, but a matter of this kind is absolutely vital to our interests.

The message I sent to you had to be forwarded from La Jolla and the only way that it could be done was to have it sent collect. I would therefore appreciate your advising as to the charge so that we can reimburse you for this unnecessary expense to you.

Yours very truly,

F. V. D. Cruser

Efficiency Engineer.

FVDC:K

COMMISSIONERS
F. M. NEWBERT
M. J. CONNELL
E. L. BOSQUI

EXECUTIVE OFFICER
CARL WESTERFELD

FISH AND GAME COMMISSION
OF CALIFORNIA

SAN FRANCISCO Dec. 15, 1917.

Mr. W. C. Crandall,
The Scripps Institution,
La Jolla, California.

Dear Mr. Crandall:-

We are much obliged for the kelp data. We were under the impression that the quantity of kelp harvested this year would not come so near the 400,000 ton mark. We suppose we can figure on 400,000 tons at least for next year.

In a former letter you say you can send us a paper on the kelp industry during January, for publication in 'California Fish and Game'. Material for the next number is due on the first of March so you can take your time, but we think that such a paper should not be delayed longer than the next number.

I expect to go to Los Angeles on Monday night and hope I will be able to get down to San Diego, however, the time will be short as I wish to get back before Christmas.

I am enclosing a letter from Mr. H. W. Aitken, 2513 Fairmount Avenue, Philadelphia, in which he asks for material put up in alcohol. I understand you have someone at the station who can supply material of this sort.

Very truly yours,

N. B. Scofield In Charge.

Department of Commercial Fisheries.

NBS:GC

Dec.24th 1917.

Mr.F.W.D.Cruser,

Oswego,N.Y.

My dear Mr.Cruser:

Your telegram of the 14th was received at Long Beach being telehponed to catch me there. This was in the usual order of business. At the time I was in conference with Mr.Peiper and he telegraphed you the result of our conference. The general closing orders have been issued with the idea of assisting the companies adjacent to beds. Through misunderstandings, base rumors and general lack of kelp, the beds adjacent to other plants have been encroached upon by companies not adjacent. As soon as possible, I arrqnged for a meeting of the various companies to go over the situation as nothing illegal had been done but morally an injustice was being committed. Last Thursday P.M., we met in Los Angeles and arrived at a basis that I am in hopes will eliminate any future difficulties. I recognize full well that if all the plants run to full capacity that they will not have all the kelp they can possibly use adjacent to their plants and that the temptation is to ruh into the other fellows teritory but I am in hopes that I was able to get all to see that this would be poor policy for each and all.

A letter showing the results of the meeting is being drawn up by the Fish and Game Commission and will be forwarded to your Wilmington office as soon as possible. There is possible more pressure than before to keep things lined up as the old County License was never valid but was assumed. The only thing that did not bring this condition to a crisis before was that the companies had never been at it so consecutively as during this year and ~~hat~~ that weather has continued so excellent for

harvesting. Practically not a day has been lost through bad weathhr ~~it~~ since early last Spring. Everthing from rot to good weather seemed to conspire to make the harvesting of kelp a hard one for supply this year.

Regarding the real needs of your plant, it is impossible for any in the government service to judge concerning your particular plant as no courtesy was ever extended to any authorized government or state officials and we are as a result in a poorer position to know what your needs are than we are in the other plants all of whom have been mo st courteous. Your policy has always made it difficult for all concerned in meetings that have been held. Mr. Peiper himself, as have your other managers, always extend every means wit in their power to assist us. The general attitude of your eastern office is not one conducive to drawing favors from associates.

Yours sincerely

Collaborator.

COMMISSIONERS
F. M. NEWBERT
M. J. CONNELL
E. L. BOSQUI

EXECUTIVE OFFICER
CARL WESTERFELD

FISH AND GAME COMMISSION
OF CALIFORNIA

SAN FRANCISCO December 28, 1917.

Mr. W. C. Crandall,
Scripps Institution,
La Jolla, California.

Dear Mr. Crandall:-

We are sending you enclosed a copy of our proposed letter to the kelp operators. We wish you would make any corrections that you deem advisable and let us know if we have gotten the agreement as you understood it. It was our understanding that in asking the companies to acknowledge the receipt of the agreement it was simply to be sure that they understand the apportionment of the beds and it was not to signify that they agreed in writing to the arrangement.

As soon as you can return this copy we will issue the letter.

Very truly yours,

N. B. Scofield In Charge.

DEPARTMENT OF COMMERCIAL FISHERIES.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
WASHINGTON, D. C.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

INVESTIGATION OF FERTILIZER RESOURCES.

La Jolla Cal.

Dec.29th 1917.

Chief,Bureau of Soils:

Washington,D.C.

Dear Sir:

Enclosed you will find a table showing the names of beds according to the Cal. Fish and Game Schedule, numbers accordingly, numbers to agree with the Sen.Doc. 190, areas of various areas, cuts by companies in various beds arranged by months and totaled for the whole.by months and by the year. This material is as accurate as I have been able to get it and is practically correct since July. The totals are correct for the year but the bed distribution is inaccurate for the first half of the year. I would ask that this table be used only in so far as totals are concerned and that data for individual plants be not made public. The data has been obtained on that consideration. The last P.P. 8000 is an estimate for the Pacific Products Co. whose complete data I have been unable to obtain. Under Handpickers I have lumped also the work of companies that have done a little and then stopped so as to make the work more complex than necessary. It is interesting to note that the cut since July 25th when the California State Law went into effect has not caused the various companies to lessen their cut. They are anxious for more kelp than they are able to get. Thr present control of the beds has worked to the advantage of the various companies as a whole and the beds have shown that the cut is better under control than without it. This year has been a peculiar one form the climatic standpoint and the results have shown in the kelp beds. Namely the temperature of the

water has been higher by about 3 degrees C than normally : there has been an absence of northwest winds: there has been an absence of well defined upwelling of the lower waters: there has been continued quiet weather up to the present time as there has been no storm so far this season and so far no high seas have begun to run. As a result all c ompanies h have been able to harvest every day since early in the spring. The amount that could be harvested has sometimes been small due to lack of kelp in beds adjacent to thier plants. This has brought about a tendency to run into the other fellows territory. Rumors, complaints and general denials have been made between the different sections. As the closing laws were made with the object in mind of controlling the opening and closing for the benefit of the companies adjacent to given beds and then there being a breaking over of the companies from another district in going into these beds, legally all O.K. but morally wrong,an amount of friction develped between the different sections.

STORY OF FRICTION.

Rumor and claims were first made by the Hercules and Swift that the Long Beach and Wilmington Companies were cutting at Mateo Bed#8 and thence t Laguna, territory set aside by mutual agreement to the San Diego Companies. Then that the same companies cut at Clemente and Santa Barbara Is. Result was that they went to Redondo Bed#14 and par tially cut it out. Altho they claim not to have cut it clean, they certainly depleted the bed. They then skipped to Bed #18 and cut to Bed #20. Legally they had a right to do this. They made a small cut in the Bed #21 which was illegal as it is the bed closed for the Federal Government. This illegal cutting was done by the Hercules Harvesters and was explained

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STORY OF FRICTION.

Rumor and claims were first made by the Hercules and Swift that the Long Beach and Wilmington Companies were cutting at Mateo Bed#8 and thence t Laguna, territory set aside by mutual agreement to the San Diego Companies. Then that the same companies cut at Clemente and Santa Barbara Is. Result was that they went to Redondo Bed#14 and partially cut it out. Altho they claim not to have cut it clean, they certainly depleted the bed. They then skipped to Bed #18 and cut to Bed #20. Legally they had a right to do this. They made a small cut in the Bed #21 which was illegal as it is the bed closed for the Federal Government. This illegal cutting was done by the Hercules Harvesters and was explained

by mistaken orders. To add to the apparent cutting, the harvesters went first to a point about 1/2 mile south of the Fede al wharf and put down t their anchors which they left on buoys and then came back and picked up the second night. I was present with Dr.Turrentine and what we took to be ha vesting the second night was simply the boats coming up and picking up their anchorages which is a perfectly legal thing to do but looked bad. Then a harvester, the Kenvil claims that it mistook the mooring of these as the Federal line a d made the illegal cut. instead of stopping asper orders at a mooring for a barge that was farther down the coast. This matter has been turned over in full to the Cal.Fish and Game Commission by both Dr.Turrentine and myself. Dr.Turrentine and I differ as to the intents and the actual proceedings on the second night but I think the evidence and the regular nautical proceedingsshould temper ones extreme view of the matter. Hercules did hate to see so much kelp available and the men on the boats naturally did not understand the political necessities brhind the present opening and closing orders. Their views are held by all those in the kelp business and we all ho e to get the large beds opened next s ring but it was no time for poaching. However nonpoaching was done in that territory so that is a closed story. As the Federal Bed w s only shaved on the o tside and no material da age done, I believe that the Fish and Game Commission will only reprimand the Hercules Comp ny and file this misdeed against any other misdeed occuring in the future. The Fish and Game Commission feels that it at fault to this extent that it has not carried forward f rmer closings in the last closing orders and that this may have lead to some of the misunderstanding.

ADDRESS ALL COMMUNICATIONS TO
CHIEF, BUREAU OF SOILS.

UNITED STATES DEPARTMENT OF AGRICULTURE,
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WASHINGTON, D. C.

INVESTIGATION OF FERTILIZER RESOURCES. #4.

As a result of the misunderstandings and encroachments in others district a meeting was called in Los Angeles at the Clark Hotel and an agreement was entered into whereby the followingdistricts were recognized as being practically in exisitence.

Hercules and Swift or San Diego Region.

Coast San Diego to San Juan Point, Clemente, Santa Barbara Is. and St. Nicolas Is.

Pac. Products, Sea Products and Diamond Match or Long Beach District. San Pedro along the coast to Ventura Bed.

Lorned, Cal. Chem and Fed ral bor Santa Barbara District, Carpenteria to Naples.

The rest of the coast and remaining islands to be considered open territory.

Laguna beds and Gorda beds are to ne subject to advisory action by myself and Fish and Game representatives.

This will not mean that all the companies can get all the kelp they need adjacent to their plants but that they will have to supplement their cut by longer hauls. For the present then things seem serene but it is not until late next summer that we may expect further difficulties.

RESULTS OF HARVESTING.

Taking some of the beds that have been cut regularly, there appears that from 17 to 25% of the est mate according to Sen Doc.#190 is actually going into the plants from these beds. To this would necessarily be added the amount that is lost in the cutting, that that is not cut and that that is cut at high tide. Taking into a count data to date one might be safe

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in taking 33% of the Sen Doc. 190 asthe probable content of beds. Practically 1.5% K_2O is present in wet kelp and with this data any desired theoretical material can be worked.

The present planta worked to capacity would care for all the kelp between San Diego and Point Conception. The only difficulty is the transportation problem.

I have delayed this report expecting to receive the minuted of the meeting on the 20th from the Fish and Game Commission but I have given the abstract of them as I recall them.

Yours truly

Collaborator.

Dec.30th 1917.

Mr.N.B.Scofield,

New Call Bldg.,

San Francisco,Cal.

My dear Mr.Scofield:

Your letter of the 28th is at hand. I am returning copy of kelp agreement with suggested changes:

Suggest that bed numbers be added so as to definitely define said areas. San Diego area Beds # 1-9 incl., 40,41, 43-45 incl.

Long Beach area Beds 11-18 incl.

Santa Barbara Beds # 20-28 incl.

Arbitration beds Laguna # Bed #10

also Gorda # 19. (Omitted in letter)

Open to all at any time subject to opening and closing orders only of the Fish and Game Commission:

Beds 29 - 31 incl. Coast

Beds 32 - 39 incl. Islands.

Suggest above as there is a closing order on a portion of Bed #29 now in force and remaining so until Apr. 1st.

Very truly yours